

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

ALASKA ELECTRICAL PENSION FUND;
GENESEE COUNTY EMPLOYEES'
RETIREMENT SYSTEM; COUNTY OF
MONTGOMERY, PENNSYLVANIA;
COUNTY OF WASHINGTON,
PENNSYLVANIA; and CITY OF NEW
BRITAIN, CONNECTICUT, on behalf of
themselves and all others similarly situated,

Plaintiffs,

vs.

BANK OF AMERICA, N.A.; BARCLAYS
BANK PLC; B.N.P. PARIBAS SA;
CITIGROUP INC.; CREDIT SUISSE AG,
NEW YORK BRANCH; DEUTSCHE BANK
AG; THE GOLDMAN SACHS GROUP, INC.;
HSBC BANK USA, N.A.; ICAP CAPITAL
MARKETS LLC; JPMORGAN CHASE &
CO.; MORGAN STANLEY & CO. LLC;
NOMURA SECURITIES INTERNATIONAL,
INC.; ROYAL BANK OF SCOTLAND PLC;
UBS AG; and WELLS FARGO BANK, N.A.,

Defendants.

Case Nos.: 14-cv-7126 (JMF)
14-cv-7907 (JMF)
14-cv-8342 (JMF)
14-cv-8365 (JMF)
14-cv-8576 (JMF)

**CONSOLIDATED AMENDED
CLASS ACTION COMPLAINT**

JURY TRIAL DEMANDED

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Plaintiffs Alaska Electrical Pension Fund; Genesee County Employees' Retirement System; the County of Montgomery, Pennsylvania; the County of Washington, Pennsylvania; and the City of New Britain, Connecticut (collectively, "Plaintiffs"), individually, collectively, and on behalf of all persons and entities similarly situated, bring this class action under Section 1 of the Sherman Antitrust Act, Sections 4 and 16 of the Clayton Antitrust Act, and certain state laws, for actual damages, treble damages, punitive damages, declaratory and injunctive relief, costs of suit, pre- and post-judgment interest, and other relief, and allege as follows:

NATURE OF THE ACTION

1. This case involves a conspiracy by Defendants to manipulate "ISDAfix." ISDAfix is a key benchmark interest rate for a range of financial derivative instruments, including interest rate swaps and swaptions. Defendants are the fourteen banks that dominate the market for interest rate derivatives and set ISDAfix, as well as ICAP Capital Markets LLC ("ICAP"), an inter-dealer broker that participated in Defendant Banks' (defined below) conspiracy.

2. Plaintiffs and members of the Class (defined below) are Defendants' customers, contracting directly with Defendant Banks for instruments tied to ISDAfix, such as swaptions, and for instruments traded in the markets Defendants manipulated in order to influence ISDAfix, such as plain vanilla interest rate swaps. By secretly colluding to collectively manipulate ISDAfix throughout the Class Period (defined below), Defendants extracted supra-competitive profits from Plaintiffs and the Class. Plaintiffs bring this action to redress the harm inflicted by Defendants, which likely amounts to billions of dollars class-wide.

3. ISDAfix was designed to represent current market fixed rates for interest rate swaps of various terms. Specifically, it is supposed to be an average mid-market swap rate for

six major currencies at selected maturities. This case concerns the ISDAfix rate for U.S. Dollars (“USD”), which was, until recently, administered by ICAP.

4. Throughout the Class Period, the USD ISDAfix swap rates were set every day between 11:00 and 11:15 a.m. Eastern Time in a two-step process.¹ The ISDAfix setting process began with rates drawn from actual transactions in the swaps market, where Defendants were supposed to be operating independently as horizontal competitors. From these transactions, ICAP was supposed to calculate a “reference rate,” which was to be ICAP’s estimate of the average trading rate of interest rate swaps for USD at 11:00 a.m. ICAP circulated the reference rate to the Defendant Banks, “polling” each of them as to the bank’s actual bid/offer spread. ICAP then adjusted the reference rate based on Defendants’ submissions with the resulting figure being the final, published ISDAfix rate for the day. From start to finish, ISDAfix was supposed to be set based on real transactions and prices drawn from a competitive market.

5. Rather than allow free market forces to set ISDAfix, Defendants conspired to, and did, rig it to their advantage.

6. *First*, Defendants colluded in the market for swaps with the purpose of impacting ICAP’s reference rate. Defendants shared with each other their own competitively sensitive information, such as intended orders and how balanced or unbalanced the banks’ exposure was on a particular day. No competitor operating independently would ever share such commercially sensitive information with its competitors absent collusion. By sharing such information, the Defendant Banks were able to coordinate their trading activities leading up to the ISDAfix polling window. To move the market, Defendants would collusively “bang the close” by executing a series of rapid-fire transactions through ICAP immediately before the opening of the

¹ USD 1-year ISDAfix swap rates were set twice daily, at 11:00 a.m. and 3:00 p.m.

polling window. Defendants would also instruct ICAP to delay reporting large market moving transactions until after the setting of ISDAfix. Through these coordinated practices, Defendants moved the swaps market in the desired direction just prior to 11:00 a.m., when ICAP would calculate the reference rate to use in polling the Defendant Banks. The Defendants Banks' actions in the swaps market purposely impacted the reference rate.

7. Economic analyses commissioned by Plaintiffs confirm this manipulative conduct: through the application of statistical tests and economic "screens," Plaintiffs' experts have identified thousands of instances of manipulation, across multiple tenors, occurring on *over 1,700 days* during the Class Period. In other words, they found signs of *market manipulation* on *nearly every trading day* during the Class Period. These movements can only be explained by collusion, and this is in line with, but in addition to, the fact that Defendants were rubberstamping the ISDAfix reference rate on the back end nearly every trading day during the Class Period, as described below.

8. *Second*, Defendants colluded with respect to their ICAP submissions during the polling process. The Defendant Banks agreed with each other that they would routinely not disturb the reference rate posted by ICAP, even though the polling process was supposed to be a *safeguard against* market manipulation. In a market free of collusion, a reference rate that had been subject to dramatic, last-minute swings would have been rejected by Defendant Banks as not reflecting the prices at which each would be willing to enter into swaps.

9. Rather than make honest, individual submissions to ICAP, reflecting the true market price, nearly *every day for multiple years*, the Defendant Banks incredibly claimed to have the *exact same* bid/ask spread, *down to five decimal points*. The odds against Defendant Banks unilaterally submitting over an extended period of time the exact same quotes without

colluding are astronomical. Yet, the economic evidence reveals this to be precisely what happened.

10. A given bank was willing to submit to ICAP the exact same rate as the other Defendant Banks even if it was personally agnostic (or even against) the direction the reference rate had moved on a particular day because the other banks would return the favor on another day. There were more profits to be earned for Defendants in maintaining the shared ability to manipulate ISDAfix over the long term than there were to be lost due to a divergence of interests on any particular trading day.

11. Absent collusion, it would not have made economic sense for any of the Defendants to engage in the conduct outlined above and documented below in detail. A Defendant Bank acting on its own would incur too large a risk that the market would actually move against it. Thus, attempts to manipulate ISDAfix by trying to move the market for swaps was a risky and ultimately hopeless task for any one market participant – but not for the Defendant Banks acting collectively. Not only was the swaps market too big to be consistently moved except by a combination of these market-dominating Defendants, but *only these Defendants* could ensure the resulting impact on the reference rate was not undone through an honest “polling” process on the back end.

12. Defendants’ conspiracy harmed Plaintiffs and members of the Class. Plaintiffs and the Class were injured each time they received cash flows from a financial instrument tied to a manipulated ISDAfix rate or traded in the markets Defendants manipulated in order to influence ISDAfix. The entire day’s trading activities for swaps were distorted by Defendants’ collusive efforts to move ICAP’s reference rate, *i.e.*, to fix the price for swaps in the run-up to the polling process.

13. Defendants carried out their unlawful conspiracy for years in secret, and without detection, until in 2013 government regulators first disclosed that they were investigating Defendants' manipulation of ISDAfix. In April 2013, the Commodity Futures Trading Commission ("CFTC") began probing price manipulation by ICAP and interviewing ICAP brokers as well as employees of the Defendant Banks. In August 2013, based on recorded telephone calls and emails that had been reviewed, the CFTC reportedly concluded that the Defendant Banks had instructed ICAP brokers to facilitate as many interest rate swaps as possible to push ISDAfix to a predetermined level.

14. On September 9, 2014, *Bloomberg* reported that the CFTC had "told the U.S. Justice Department they've ***found evidence of criminal behavior*** following an investigation into banks' alleged manipulation of ISDAfix[.]"² Other regulators, such as the U.K. Financial Conduct Authority and Germany's financial regulator, BaFin, have launched parallel probes into the manipulation of ISDAfix, and recent news reports indicate that criminal investigations are ongoing in the United States.³

15. These probes have not only turned up evidence of Defendants' wrongdoing, but have also prompted Defendants to take actions evidencing consciousness of guilt. Tellingly,

² Matthew Leising and Tom Schoenberg, *CFTC Said to Alert Justice Department of Criminal Rate Rigging*, *Bloomberg* (Sept. 9, 2014), <http://www.bloomberg.com/news/2014-09-08/cftc-said-to-alert-justice-department-of-criminal-rate-rigging.html>. See also Tom Schoenberg, Greg Farrell and David McLaughlin, *U.S. Preparing Charges Against Banks in Currency Rate-Rigging Scandals*, *Bloomberg* (Oct. 8, 2014) <http://www.bloomberg.com/news/2014-10-08/u-s-said-to-ready-charges-against-banks-in-forex-rigging.html> (noting that "[e]vidence produced as part of [Libor settlement] agreements also is being used in a criminal probe of alleged manipulation of ISDAfix . . . according to a person with knowledge of the matter").

³ Ben Protess and Jessica Silver-Greenberg, *Big Banks Face Another Round of U.S. Charges*, *New York Times* (Oct. 6, 2014), <http://dealbook.nytimes.com/2014/10/06/big-banks-face-another-round-of-u-s-charges> ("The Justice Department . . . has widened its focus to include a criminal investigation into banks that set an important benchmark for interest rate derivatives, a previously unreported development that coincides with international regulators' [sic] proposing overhauls to the rate-setting process.").

both anomalous patterns uncovered by Plaintiffs' experts – in the trading activity leading up to 11:00 a.m., *and* in the consistently identical responses to ICAP's poll – began to dissipate at the exact same time. Both patterns began to dissipate in December 2012, when Defendant Banks came under increasing scrutiny for multiple benchmark-setting scandals, such as that involving the London Interbank Offered Rate ("LIBOR"), in which ICAP itself has been implicated. That both phenomena began to fade at this same time provides further evidence of who was behind the observed trading anomalies.

16. As government regulators continue to look into Defendants' conspiracy, numerous banks have cut ties to ISDAfix. By September 2013, Defendants The Goldman Sachs Group, Inc., HSBC Bank USA, N.A., Morgan Stanley & Co. LLC, Nomura Securities International, Inc., Royal Bank of Scotland plc, and Wells Fargo Bank, N.A. had all abandoned the process. Because of ICAP's involvement in this conspiracy, ISDA removed ICAP from its role as the administrator of the USD ISDAfix rates in January 2014.

17. In reaction to the rate-fixing scandals, the United Kingdom has moved to criminalize any manipulation of benchmark rates, including ISDAfix.⁴ The ISDAfix rate setting process will also be brought under the supervision of the U.K.'s Financial Conduct Authority on April 1, 2015.⁵

⁴ Julia Sun, *UK to Criminalize Manipulation of Seven Benchmark Rates Before Election*, The Street (Sept. 25, 2014), <http://www.thestreet.com/video/12892447/uk-to-criminalize-manipulation-of-seven-benchmark-rates-before-election.html>; HM Treasury, *Chancellor confirms manipulation of key FOREX benchmark to be made a criminal offence*, Gov.uk (Dec. 22, 2014), <https://www.gov.uk/government/news/chancellor-confirms-manipulation-of-key-forex-benchmark-to-be-made-a-criminal-offense>.

⁵ Lianna Brinded, *FCA to regulate FX, swaps, repo, gold and oil indexes after market fixing scandals*, International Business Times (Dec. 22, 2014), <http://www.ibtimes.co.uk/fca-regulate-fx-swaps-repo-gold-oil-indexes-after-market-fixing-scandals-1480594>. *See also* Financial Conduct Authority, *Bringing additional benchmarks into the regulatory and*

JURISDICTION AND VENUE

18. This Court has subject matter jurisdiction over this action under 28 U.S.C. §§1331, 1332, 1337(a), and 1367(a) and pursuant to §§4 and 16 of the Clayton Act, 15 U.S.C. §§15(a) and 26.

19. Venue is proper in this District pursuant to §§4, 12 and 16 of the Clayton Act, 15 U.S.C. §§15(a), 22 and 26, and 28 U.S.C. §1391(b), (c) and (d). One or more of the Defendants resided, transacted business, were found, or had agents in this District; a substantial part of the events giving rise to Plaintiffs' claims arose in the District; and a substantial portion of the affected interstate trade and commerce described herein has been carried out in this District.

20. Each Defendant is subject to personal jurisdiction because each transacted business throughout the United States, including in this District, including by transacting in interest rate swaps and other derivatives settled on the basis of ISDAfix with members of the Class throughout the United States and in this District.

21. Defendants' activities, and those of their co-conspirators, were within the flow of, were intended to, and did, in fact, have a substantial effect on foreign and interstate commerce. During the Class Period, Defendants used the instrumentalities of interstate commerce, including interstate wires, in furtherance of their illegal conspiracy.

22. Defendants' manipulation, conspiracy, and conduct alleged herein had direct, substantial and reasonably foreseeable effects on U.S. domestic commerce, and such effects give rise to Plaintiffs' claims, within the meaning of the Foreign Trade Antitrust Improvements Act.

supervisory regime (Dec. 22, 2014), <http://www.fca.org.uk/news/cp14-32-additional-benchmarks>.

THE PARTIES

Plaintiffs

23. Plaintiff Alaska Electrical Pension Fund (“Alaska Fund”) is a pension fund with its headquarters in Anchorage, Alaska. As reflected in Appendix A, during the Class Period, the Alaska Fund transacted in interest rate derivatives expressly tied to ISDAfix or directly impacted by Defendants’ manipulation of ISDAfix. The Alaska Fund specifically transacted on days that have been identified as being subject to manipulation, with one or more Defendant Banks, including Bank of America, Barclays, B.N.P. Paribas, Citibank, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, Morgan Stanley, Royal Bank of Scotland, UBS, and Wells Fargo. As a result, the Alaska Fund was injured by Defendants’ unlawful and anticompetitive conduct.

24. Plaintiff Genesee County Employees’ Retirement System (“Genesee County”) is a multiple-employer defined benefit pension plan with its principal place of business in Flint, Michigan. Participating employer units include Genesee County, Genesee County Road Commission, Genesee County Community Mental Health, Genesee County Division of Water and Waste Services, Genesee District Library, and the City of Mt. Morris. As reflected in Appendix A, during the Class Period, Genesee County transacted in interest rate derivatives expressly tied to ISDAfix or directly impacted by Defendants’ manipulation of ISDAfix. Genesee County specifically transacted on days that have been identified as being subject to manipulation, with one or more Defendant Banks, including Barclays, Credit Suisse, Deutsche Bank, Goldman Sachs, JPMorgan, and Morgan Stanley. As a result, Genesee County was injured by Defendants’ unlawful and anticompetitive conduct.

25. Plaintiff the County of Montgomery (“Montgomery County”) is a political subdivision organized and existing under the laws of the Commonwealth of Pennsylvania. As

reflected in Appendix A, during the Class Period, Montgomery County, transacted in interest rate derivatives expressly tied to ISDAfix or directly impacted by Defendants' manipulation of ISDAfix. Montgomery County specifically transacted on days that have been identified as being subject to manipulation, with one or more of the Defendant Banks, including UBS. As a result, Montgomery County was injured by Defendants' anticompetitive conduct.

26. Plaintiff the County of Washington ("Washington County") is a political subdivision organized and existing under the laws of the Commonwealth of Pennsylvania. As reflected in Appendix A, during the Class Period, Washington County transacted in interest rate derivatives expressly tied to ISDAfix or directly impacted by Defendants' manipulation of ISDAfix. Washington County specifically transacted on days that have been identified as being subject to manipulation, with one or more of the Defendant Banks, including JPMorgan. As a result, Washington County was injured by Defendants' anticompetitive conduct.

27. Plaintiff the City of New Britain ("New Britain") is a political subdivision organized and existing under the laws of Connecticut. As reflected in Appendix A, during the Class Period, New Britain transacted in interest rate derivatives expressly tied to ISDAfix or directly impacted by Defendants' manipulation of ISDAfix. New Britain specifically transacted on days that have been identified as being subject to manipulation, with one or more of the Defendant Banks, including Deutsche Bank. As a result, New Britain was injured by Defendants' anticompetitive conduct.

Defendants

28. Defendant Bank of America, N.A. is a wholly owned subsidiary of Bank of America Corporation, a Delaware corporation, with its principal place of business in Charlotte, North Carolina, and with branch locations in New York, New York. As used herein, "Bank of

America” refers to Bank of America, N.A., its subsidiaries and affiliates and, to the extent it served on the ISDAfix panel during the Class Period, Merrill Lynch Capital Services, Inc. During the Class Period, Bank of America both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

29. Defendant Barclays Bank PLC is a British public limited company, with its principal place of business in London, England, and with branch locations in New York, New York. As used herein, “Barclays” includes Defendant Barclays Bank PLC and its subsidiaries and affiliates. During the Class Period, Barclays both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

30. Defendant BNP Paribas SA is a company organized and existing under the laws of France, with its principal place of business in Paris, France, and with branch locations in New York, New York. As used herein, “BNP” includes Defendant BNP Paribas SA and its subsidiaries and affiliates. During the Class Period, BNP both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

31. Defendant Citigroup, Inc. is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business in New York, New York. As used herein, “Citigroup” includes Defendant Citigroup, Inc. and its subsidiaries and affiliates, including Citibank N.A. During the Class Period, Citigroup both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

32. Defendant Credit Suisse AG, New York Branch is a branch based in New York, New York that operates as a part of Credit Suisse AG. As used herein, “Credit Suisse” includes Defendant Credit Suisse AG, New York Branch and the subsidiaries and affiliates of Credit

Suisse AG. During the Class Period, Credit Suisse both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

33. Defendant Deutsche Bank AG is a corporation organized and existing under the laws of Germany, with its principal place of business in Frankfurt, Germany, and branch locations in New York, New York. As used herein, “Deutsche Bank” includes Defendant Deutsche Bank AG and its subsidiaries and affiliates. During the Class Period, Deutsche Bank both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

34. Defendant The Goldman Sachs Group, Inc. is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business in New York, New York. As used herein, “Goldman Sachs” includes Defendant The Goldman Sachs Group, Inc. and its subsidiaries and affiliates, including Goldman Sachs & Co. Throughout the majority of the Class Period and until approximately June 2012, Goldman Sachs both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

35. Defendant HSBC Bank USA, N.A. a wholly owned subsidiary of HSBC USA, Inc., is a Delaware corporation with its main office in McLean, Virginia. It has a principal office located in New York City. As used herein, “HSBC” refers to HSBC Bank USA, N.A., and its subsidiaries and affiliates. Throughout the majority of the Class Period and until approximately January 2013, HSBC both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

36. Defendant JPMorgan Chase & Co. is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business in New York, New York.

As used herein, “JPMorgan” includes Defendant JPMorgan Chase & Co. and its subsidiaries and affiliates, including JPMorgan Chase Bank N.A. During the Class Period, JPMorgan both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

37. Defendant Morgan Stanley & Co., LLC is a United States investment banking firm headquartered in New York, New York. As used herein, “Morgan Stanley” includes Defendant Morgan Stanley & Co., LLC and its subsidiaries and affiliates. Although it has since left the ISDAfix panel, during the majority of the Class Period, Morgan Stanley both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

38. Defendant Nomura Securities International, Inc. is a corporation organized and existing under the laws of New York, with its principal place of business in New York, New York, and a wholly owned subsidiary of Nomura Holdings America, Inc., which is a wholly owned subsidiary of Nomura Holdings, Inc. As used herein, “Nomura” includes Defendant Nomura Securities International, Inc. and its subsidiaries and affiliates. Throughout the majority of the Class Period and until approximately October 2013, Nomura both participated in setting the ISDAfix rate and transacted in interest rate derivatives with members of the Class.

39. Defendant Royal Bank of Scotland plc is a corporation organized and existing under the laws of the United Kingdom, with its principal place of business in Edinburgh, Scotland, and branch locations in New York, New York. As used herein, “RBS” includes Defendant Royal Bank of Scotland plc and its subsidiaries and affiliates. Throughout the majority of the Class Period and until approximately September 2013, RBS both participated in

setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

40. Defendant UBS AG is a corporation organized and existing under the laws of Switzerland, with its principal places of business in Basel and Zurich, Switzerland, and regional offices in New York, New York, and Stamford, Connecticut. As used herein, “UBS” includes Defendant UBS AG and its subsidiaries and affiliates. During the Class Period, UBS both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

41. Defendant Wells Fargo Bank, N.A., is a corporation organized and existing under the laws of the State of Delaware, and operates as a subsidiary of Wells Fargo & Co. As used herein, “Wells Fargo” or “Wachovia” includes Wells Fargo & Co. and its subsidiaries and affiliates, including Wachovia Bank, N.A. and its successor by merger Wells Fargo Bank N.A. Throughout the majority of the Class Period and until approximately September 2013, Wells Fargo both participated in setting the ISDAfix rate and transacted in interest rate derivatives with Plaintiffs and members of the Class.

42. Bank of America, Barclays, BNP, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, Morgan Stanley, Nomura, RBS, UBS, and Wells Fargo are referred to collectively herein as the “Defendant Banks.”

43. Defendant ICAP Capital Markets LLC (“ICAP”), a subsidiary of ICAP plc, is a Delaware limited liability company with its headquarters in Jersey City, New Jersey. As used herein, “ICAP” includes Defendant ICAP plc and its subsidiaries and affiliates. During the Class Period and until January 26, 2014, ICAP served as the administrator for the setting of the USD

ISDAfix rate and as a broker for billions, if not trillions, of dollars of interest rate derivative transactions.

44. Whenever reference is made in this Complaint to any act, deed, or transaction of any entity, the allegation means that the corporation engaged in the act, deed, or transaction by or through its officers, directors, agents, employees, or representatives while they were actively engaged in the management, direction, control, or transaction of the entity's business or affairs.

45. Various other non-parties also participated as co-conspirators, performed acts, and made statements in furtherance of the conspiracy. Plaintiffs reserve the right to identify other co-conspirators and to name subsequently some or all co-conspirators, whether identified here or not, as defendants.

46. Defendants are jointly and severally liable for the acts of their co-conspirators whether named or not named as Defendants in this complaint. Each Defendant acted as the agent or co-conspirator of or for the other Defendants with respect to the acts, violations, and common course of conduct alleged herein.

FACTUAL ALLEGATIONS

I. BACKGROUND ALLEGATIONS

A. Interest Rate Derivatives

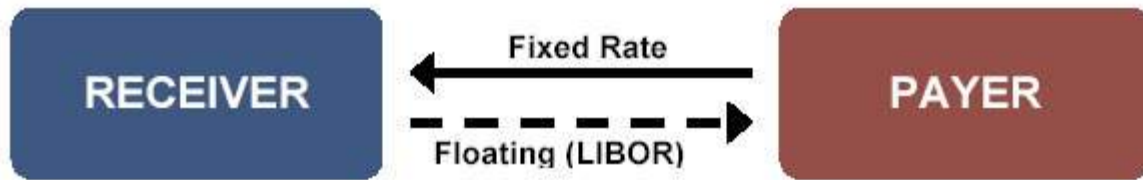
47. A derivative is a financial instrument, the value of which depends on the value of another underlying asset, such as a stock, bond, or commodity, or on a rate paid on underlying assets, such as an interest rate. Derivatives permit market participants to manage and transfer risk by allowing parties to separate out and trade individual risk components, such as interest rate risk.

48. The largest derivatives market in the world is the interest rate derivatives market. The simplest and most common type of interest rate derivative is the interest rate swap, which is

a transaction in which two parties – commonly referred to as “counterparties” – exchange interest rate payments on an agreed notional amount for a fixed period of time. Typically, one party will pay based on a “fixed” interest rate on the notional amount that does not vary from one payment to the next, while the other party will pay based on a variable “floating” interest rate that is tied to an independent benchmark such as LIBOR.⁶ The fixed rate payer can also be called the floating rate receiver and is often referred to as having bought the swap or having a “long” position. Conversely, the floating rate payer can also be called the fixed rate receiver and is referred to as having sold the swap and having a “short” position.

49. The following diagram illustrates a typical interest rate swap transaction. Here, the receiver pays the floating LIBOR rate to the payer, and the payer pays a fixed rate to the receiver:

⁶ LIBOR is a benchmark interest rate. It is supposed to represent the average interest rate, estimated by leading banks, that one bank would be charged when borrowing from another bank. Much like ISDAfix, LIBOR is important for determining the value of a wide variety of derivatives. Several Defendants – most notably Barclays, RBS, UBS and ICAP – were found by American and British regulatory agencies to have manipulated LIBOR. *See, e.g.*, CFTC Press Release, *CFTC Orders Barclays to pay \$200 Million Penalty for Attempted Manipulation of and False Reporting concerning LIBOR and Euribor Benchmark Interest Rates*, CFTC.gov (June. 27, 2012), <http://www.cftc.gov/PressRoom/PressReleases/pr6289-12>; UBS Press Release, *UBS Board of Directors authorizes settlements of LIBOR-related claims with US and UK authorities; Swiss regulator to issue order*, UBS.com (Dec. 19, 2012) http://www.ubs.com/kr/en/about-us/korea_newsdisplay.html/en/2012/12/19/20121219a.html; CFTC Press Release, *CFTC Orders The Royal Bank of Scotland plc and RBS Securities Japan Limited to Pay \$325 Million Penalty to Settle Charges of Manipulation, Attempted Manipulation, and False Reporting of Yen and Swiss Franc LIBOR*, CFTC.gov (Feb. 6, 2013), <http://www.cftc.gov/PressRoom/PressReleases/pr6510-13>; Department of Justice Press Release, *ICAP Brokers Face Felony Charges for Alleged Long-Running Manipulation of LIBOR Interest Rates*, Justice.gov (Sept. 23, 2013), <http://www.justice.gov/opa/pr/icap-brokers-face-felony-charges-alleged-long-running-manipulation-libor-interest-rates>. The investigation into other participants in the LIBOR scandal, including other Defendant Banks, is ongoing.



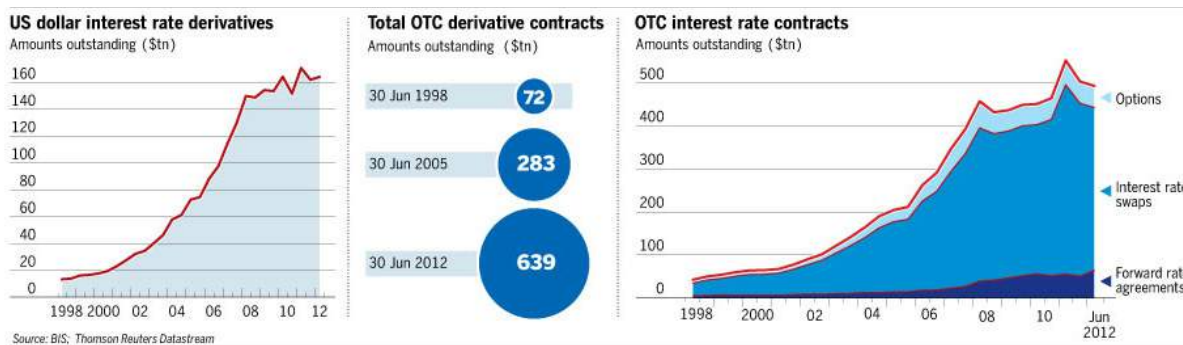
A fixed-for-floating rate swap allows parties with floating rate debt to hedge their interest rate exposure by receiving a variable rate on the notional amount in exchange for paying a fixed rate on that same notional amount.

50. For example, when an entity (*e.g.*, a company, fund, public entity, or pension fund) issues floating rate debt, it may seek to avoid interest rate risk by hedging the floating rate obligation. The debt issuer can enter into interest rate swaps with one or more banks. Under the swap, the bank assumes an obligation to pay the issuer a floating rate (which changes over time) in exchange for the issuer assuming an obligation to pay a pre-determined fixed rate to the bank. If the floating rate exceeds the fixed rate, the bank, as floating rate payer, pays the issuer. On the other hand, if the floating rate index is less than the fixed rate, the issuer, as the fixed rate payer, pays the bank. Fixed rate and floating rate payments are netted against each other with a payment made by the party owing the larger amount on the specified scheduled payment dates.

51. Over the past three decades, interest rate derivatives and, specifically, interest rate swaps have proliferated. ISDA, a trade association for the over-the-counter derivatives markets, estimates that the collective notional amounts on interest rate swaps was approximately \$2.3 trillion in 1990. By 2009, that figure had grown to over \$450 trillion. As of June 2012, according to the Bank for International Settlements, the notional amounts outstanding were

\$494 trillion for over-the-counter interest rate transactions and \$342 trillion for over-the-counter interest rate swaps, including \$164 trillion of U.S. dollar swaps.⁷

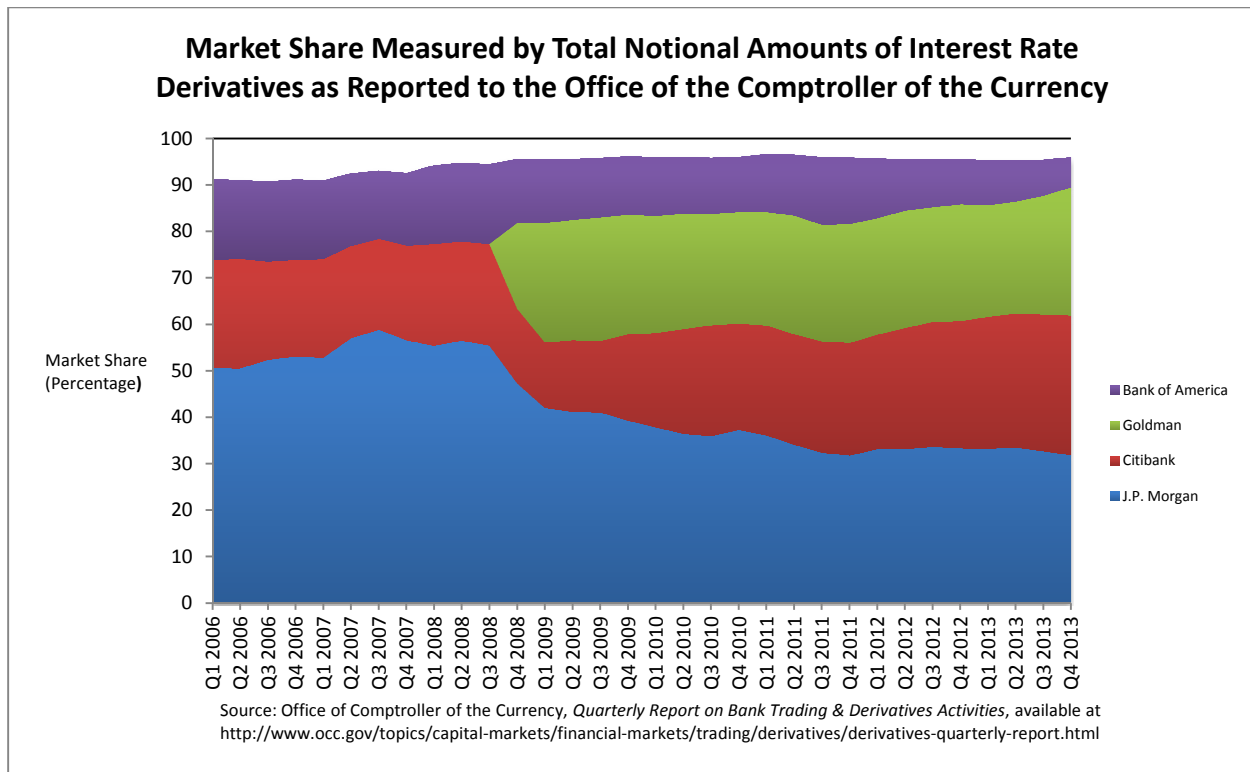
52. The following charts published by the *Financial Times* in April 2013, when news of the ISDAfix conspiracy first broke, demonstrate the magnitude of the market and its rapid growth since 1998:



53. The growth of this market has been concentrated in many of Defendant Banks, which individually and collectively maintain huge portfolios of derivatives. During the Class Period, the Office of the Comptroller of the Currency (OCC) collected data on reporting banks' derivatives activities and published quarterly reports. The OCC's data includes reports from between 800 and 1,400 banks, and yet a small group of Defendant Banks were responsible for the vast majority of interest rate derivatives. Over the course of the entire Class Period, the collective interest rate derivatives holdings of Defendants Bank of America, Goldman Sachs, Citibank, and JPMorgan represented over 90% of the reported outstanding total notional amount of interest rate derivatives held by U.S. dealers, as shown by the graph below:⁸

⁷ Michael Mackenzie, Tom Braithwaite & Kara Scannell, *Swap traders' morning fix under scrutiny*, *Financial Times* (Apr. 9, 2013), <http://www.ft.com/intl/cms/s/0/ddbebb32-a11d-11e2-bae1-00144feabdc0.html#axzz2x74uiRT6>.

⁸ The OCC did not start tracking interest rate derivatives holdings for Defendant Goldman Sachs until the fourth quarter of 2008.



54. According to the Office of the Comptroller of the Currency's *Quarterly Report on Bank Trading and Derivatives Activities – Fourth Quarter 2013*, a substantial portion of the Defendant Banks' derivatives contracts were concentrated in interest rate derivatives. For example, 77.6% of JPMorgan's derivatives contracts concerned interest rates; for Citigroup, the total was 83.7%; for Goldman Sachs, the total was 95%; for Bank of America, the total was 79.8%; for HSBC, the total was 73.9%; and for Wells Fargo, the total was 90.7%.⁹

55. As the market for interest rate derivatives has grown, so too has the variety of these investments. Another common interest rate derivative is the swaption. According to the Depository Trust & Clearing Corp., the value of swaption contracts outstanding as of July 26, 2013 was \$29.5 trillion as measured by notional amount. In a swaption, instead of swapping interest rates on the date of the transaction, the parties negotiate an option to enter into an interest

⁹ Office of Comptroller of the Currency, *OCC's Quarterly Report on Bank Trading & Derivatives Activities Fourth Quarter 2013*, Table 3.

rate swap in the future. Thus, a swaption is a contract wherein the buyer of the swaption pays the seller a premium for the option, but not the obligation, to enter an interest rate swap contract with the seller on a future. The swaption spells out all of the terms of the underlying potential swap, including the length of the swap, the notional amount, the rates for each party, the dates on which payments are due (the “settlement dates”), and how often such payments are due (the “settlement periods”), as well as the premium the buyer of the swaption must pay and when the option may be exercised.¹⁰

56. When entering a swaption, the parties may choose whether the swaption is to be *physically settled* or *cash settled*. A physically settled swaption, if exercised, results in the parties entering into the underlying swap. In a cash-settled swaption, the seller of the swaption (the party selling the right to swap a floating rate for a fixed rate) pays the buyer, on the exercise date, the market value of the right. This is known as the “expiry value.”

57. At exercise, a cash-settled swaption is either “in-the-money” or “out-of-the-money.” A cash-settled swaption is valued by comparing the fixed rate in the swaption’s underlying swap transaction to the fixed rate available on the market for an equivalent swap. If the buyer is “in-the-money,” the seller simply pays the buyer the difference in value between the underlying swap transaction and an equivalent swap transaction available on the open market on the exercise date.

58. ISDAfix is the benchmark rate that the financial community, including Defendant Banks, almost always use to settle cash-settled swaptions.¹¹ Indeed, ISDAfix is the benchmark

¹⁰ In a “payer swaption,” the buyer of the swaption is the party expected to pay the fixed interest rate. In a “receiver swaption,” the buyer of the swaption is the party expected to receive the fixed interest rate.

¹¹ In the case of USD 1-year swaptions, for which an ISDAfix rate was set at both 11:00 a.m. and 3:00 p.m., the 11:00 a.m. rate was used to determine the “expiry value.”

nominated to be the default rate by ISDA in the 2000 and 2006 ISDA Definitions, which provide standardized definitions setting the terms for interest rate and currency derivatives transactions.

Thus, on the exercise date, the parties to a swaption compare the swaption's fixed rate to the comparable ISDAfix rate on that date to determine whether the swaption is in-the-money, and, if it is, how much it is worth.

59. Cash-settled swaptions are typically valued by calculating the present value of future cash flows on the exercise date. The fixed rate specified by the swaption contract is compared to the current ISDAfix rate on the exercise date to determine the value of the net future payments under the two swaps. The net future payments are then discounted to present value, again using the then current ISDAfix rates.

60. A payer swaption is in-the-money if the fixed rate available in the market is higher than the swaption's fixed rate, because the buyer of that swaption would be making lower fixed payments than the market rate. A receiver swaption is in-the-money if the fixed rate available in the market is lower than the swaption's fixed rate, because the buyer of that swaption would be receiving higher fixed payments than the market rate.

61. If the swaption is in-the-money, then the swaption's value will increase the further the swaption's fixed rate is from the ISDAfix rate. Therefore, accurate calculation and reporting of the ISDAfix rate is critical to the fair settlement of swaptions, and even the smallest movement of ISDAfix can drastically affect the value of a cash-settled swaption.

62. In addition to interest rate swaps¹² and swaptions, there are many other financial instruments that use or make reference to the ISDAfix benchmark rate, including swapnote

¹² Though most "vanilla" swaps use LIBOR to determine the floating-rate amount, as outlined above, not all do. Plaintiffs and members of the Class have swaps whose "floating" payment streams were expressly tied to USD ISDAfix.

futures, cash-settled swap futures, structured notes linked to constant maturity swap rates, “steepeners,” “inverse floaters,” and “snowballs,” among others. The U.S. Federal Reserve uses ISDAfix as the source for USD swap rates in its Statistical Release H.15, and banks use ISDAfix rates to value their own portfolios, which are then incorporated into the banks’ reported financial results. ISDAfix rates may also be used to price commercial real estate mortgages and various types of structured bonds and notes. Finally, both the Chicago Mercantile Exchange and the Chicago Board of Trade use ISDAfix as the settlement price in their swap futures contracts.

63. With the exception of swap futures, all of these interest rate derivatives and other financial instruments were transacted in the over-the-counter market during the Class Period, meaning that there was no centralized and regulated exchange. In the over-the-counter market, inter-dealer brokers – such as Defendant ICAP – exist to provide liquidity to the market, facilitate information flow by providing a centralized hub for bids and offers, and to improve market efficiency by rapid matching of buyers and sellers. Inter-dealer brokers are well compensated by receiving a commission on the deals they create through matching a buyer and a seller.

64. In selecting an inter-dealer broker to facilitate interest rate derivative transactions, market participants have few options. In the over-the-counter interest rate derivatives market, five inter-dealer brokers “dominate the landscape.”¹³ ICAP has consistently asserted that it is the leader of this landscape. In 2007, ICAP declared itself the leader of the interdealer broker market by global revenue, and estimated its own market share as 30-31%.¹⁴ In 2014, ICAP

¹³ *Interdealer brokers: the firms that connect buyers and sellers in wholesale markets are under the cosh*, The Economist (Nov. 17, 2012), <http://www.economist.com/news/finance-and-economics/21566651-firms-connect-buyers-and-sellers-wholesale-markets-are-under>.

¹⁴ ICAP, *Annual Report for the year ended 31 March, 2007* at 20, <http://www.icap.com/~media/Files/I/Icap-Corp/Annual%20Reports/annual-report2007.pdf>.

claimed “the highest market share by total notional volume traded in interest rate derivatives products” on its new, regulated swap execution facility. ICAP claimed a 59% market share in interest rate derivative products, and noted that such products “represent the largest asset class by notional volume[.]”¹⁵ The interest rate derivatives market is highly active and profitable for inter-dealer brokers like ICAP. During the Class Period, ICAP brokered approximately \$1.4 *trillion* in interest rate swaps *every day*.

65. During the Class Period, ICAP also controlled interest rate swap prices on a Reuters electronic screen service known as Screen 19901. Screen 19901 publicized the bid/offer rates of all swap transactions of the specified terms executed through ICAP, and was updated periodically throughout the day by ICAP as trades were executed. Screen 19901 was subscribed to by around 6,000 companies, financial firms, and other market participants who relied upon its data to value interest rate swaps, swaptions, and other financial products.

66. David Kelly, who helped design the underlying analytics of Screen 19901 in the early 2000s, stated “[t]hat screen is critical. That screen makes or breaks a lot of profit and loss, so clearly there’s a lot of opportunity for influence.”¹⁶ Thus, ICAP’s control of Screen 19901 and exclusive role as the setter of swap interest rates and the collector of USD ISDAfix rates submissions combined with Defendant Banks’ substantial portfolios of interest rate derivatives created the perfect storm to enable and motivate Defendants to manipulate ISDAfix.

¹⁵ ICAP, *Annual Report for the year ended 31 March, 2014* at 21, <http://www.icap.com/~media/Files/I/Icap-Corp/Annual%20Reports/annual-report2014.pdf>

¹⁶ Matthew Leising, *CFTC Said Probing ICAP on Swap Price Allegations: Credit Markets*, Bloomberg (Apr. 9, 2013), <http://www.bloomberg.com/news/2013-04-09/cftc-said-probing-icap-on-swap-price-allegations-credit-markets.html>.

B. The Purported Process of Setting ISDAfix

67. As described above, ISDAfix is a key benchmark rate for a broad range of interest rate derivatives and other financial instruments. ISDA established ISDAfix in 1998 to serve as a benchmark of fixed swap rates. ISDAfix was intended to be a benchmark for average swap rates on a daily basis, and was developed “to facilitate the determination of exercise values for cash-settled swap options.”¹⁷ ISDAfix was supposed to provide “a transparent, readily available value and settlement rate.” Without ISDAfix, an over-the-counter derivatives market participant would have to call multiple other market participants to value, for example, a swaption. This is because the over-the-counter derivatives market did not have a centralized exchange where market prices were readily available. Thus, ISDAfix was often the only available reference for parties looking to settle interest rate options, cancel swaps contracts, and value other financial instruments. Indeed, the 2000 and 2006 ISDA Definitions establish ISDAfix as a default benchmark for calculating the value of a cash-settled swaption.

68. There are multiple varieties of ISDAfix rates for transactions of varying length in different currencies. While some ISDAfix rates are no longer currently reported, there have been rates published for the Euro, the British Pound Sterling, the Hong Kong Dollar, the Japanese Yen, the Swiss Franc, and the U.S. Dollar. The length or tenors of swaps with an ISDAfix rate range from one-year swaps to 30-year swaps. All published ISDAfix rates are expressed as a percentage to three decimal places, such as 3.202%, and Defendants as contributing banks submitted rates running to five decimal places.

69. These rates are then distributed to market participants who subscribe to five electronic screen services operated by Reuters, called ISDAFIX 1 – ISDAFIX 5. These screens

¹⁷ Intercontinental Exchange, *ISDAFIX*, <https://www.theice.com/iba/isdafix#contributors-users> (last visited Feb. 11, 2015).

are subscribed to by thousands of market participants and display that day's ISDAfix rates. For example, ISDAFIX 3 displays the USD swap rates and swap spreads, while ISDAFIX 4 displays the rates for swaps in British Pounds Sterling and Swiss Francs. An ISDAfix rate is calculated either once or twice a day, depending on the currency and maturity. While the final ISDAfix rates are published, the Defendant Banks' individual submissions are not. That information is tightly controlled by Thomson Reuters and ICAP.

70. During the Class Period, there were two parties responsible for administration of the ISDAfix benchmark fixing process: Defendant ICAP, which calculated all USD rates, and Thomson Reuters, which was responsible for all other rates.¹⁸

71. The ISDAfix rate is supposed to represent the average fixed interest rate that an over-the-counter derivatives market dealer would bid or offer for a swap of a certain tenor and currency in exchange for a specified floating LIBOR rate (*e.g.*, 3-month LIBOR). In ISDA's own words:

How does ISDAFIX fix?

Rate Definition.

The contributor is asked to provide a rate which is the mean of where *that dealer would itself offer and bid a swap* in the relevant maturity for a notional equivalent amount of US \$50 million or whatever amount is deemed market size in that currency for that tenor to an acknowledged dealer of good credit in the swap market. *The rate should not be where the dealer sees mid-market away from itself, but should be a function of its own bid/offer spread.*¹⁹

72. Thus, the rules governing ISDAfix required the banks to make submissions to ICAP based on their own, personal bid/offer spreads. This is not changed by ISDA's 2012 letter to the European Commission's Public Consultation on the Regulation of Indices (the

¹⁸ In 2014, ISDA stripped ICAP of its ISDAfix duties, most likely in reaction to the investigation and allegations regarding ICAP and Defendant Banks' rigging of the ISDAfix rate.

¹⁹ ISDA, *How does ISDAFIX fix?, Rate Definition*, <https://web.archive.org/web/20120630173533/http://www2.isda.org/asset-classes/interest-rates-derivatives/isdafix> (emphasis added).

“ISDA/European Commission Letter”). In response to the questions: “Who in your sector submits data for inclusion in benchmarks? What are the current eligibility requirements for benchmarks’ contributors?,” ISDA responded with respect to ISDAfix rates:

ICAP collects spread information from contributors via a secure website that contributors log into every morning. Contributors are asked to indicate the USD swap spread as of 11:00 am, *in accordance with the criteria set by ISDA* At 10:58 am, ICAP will send an email reminder to each contributor reminding them to contribute. At 11:02 am, ICAP will indicate on the secure website a USD swap spread and USD swap rate to serve *as a reference point for contributors*. This reference point is generated from two sources of information:

(1) Information contained on Reuters page 19901 at 11:00 am, which reflects the most recent swap spreads from completed trades and executable bids and offers in market size done/posted at ICAP.

(2) Information reflecting executed trades and executable bids and offers at 11 a.m. for US Treasury securities from ICAP’s BrokerTec US Treasury electronic trading platform.

By their nature, because both sources of information reflect completed transactions and/or at-risk trading interest, ICAP considers them to be a useful and meaningful reference point for where the market may be at that point in time.

From 11:00 am to 11:15 am, contributors are able to submit *their* swap spread information and *rate* to the secure website. In terms of process, contributors may accept the reference swap spread and/or rate indicated on the website, or submit different values. During this time the ICAP swaps desk monitors dealer participation to ensure that the 10-bank minimum is met. As contributors submit spread and rate information, the values are sent to Thomson Reuters on a streaming basis.

At 11:26 am, Thomson Reuters will calculate the USD ISDA FIX rate by eliminating a given number of the highest and lowest rates submitted, and then by calculating a simple average of the remaining rates. A rate will be posted as long as the Minimum Number of Contributions is received.²⁰

73. Thus, Defendant Banks could “accept the reference . . . rate.” But even ISDA’s post-hoc explanations make clear that that rate was just that, only a “reference point.”

²⁰ ISDA, *ISDA Response to the European Commission’s Public Consultation on the Regulation of Indices*, at 7 (Nov. 29, 2012), <http://www2.isda.org/news/isda-response-to-the-european-commissions-public-consultation-on-the-regulation-of-indices> (emphasis added).

“Contributors” are still required to abide by the definition of ISDAfix itself, *i.e.*, submissions were supposed to still reflect “their . . . rate.” Thus, in line with ISDAfix’s definition, contributing banks were to respond with “the rate which is the mean of where that [Defendant] would itself offer and bid a swap,” a function of “of [that Defendant’s] own bid/offer spread.” A Defendant Bank was to “accept” ICAP’s reference rate *if and only if* the reference rate *exactly* matched the mean of its own *bank-specific* spreads.

C. Government Investigations into the LIBOR Scandal Reveal the Extent of Collusion Between Defendants in Manipulating Financial Benchmarks

74. Government investigations into the manipulation of ISDAfix are, in part, an outgrowth of cooperation agreements reached in the earlier investigations of and prosecutions in the LIBOR scandal. Following revelations regarding manipulation of LIBOR, regulatory agencies began to focus on whether the banks responsible for the LIBOR benchmark had colluded to illicitly profit. The investigations resulted in both criminal and regulatory charges, and were coordinated between agencies from the United States, the United Kingdom, Canada, Japan, and the European Union.

75. While they are still ongoing, the LIBOR investigations have already turned up emails and other evidence proving that certain Defendants and others colluded to submit false rates to drive the LIBOR benchmark in whichever direction would benefit them the most. This evidence showed that swap traders at a Defendant Bank would tell their colleagues in charge of sending the rate submissions which rate would make the Defendant Bank the most money that day. This paper trail, along with other evidence, eventually led to enormous fines and settlements for Defendants Barclays, UBS, and others.

76. On December 19, 2012, the scandal widened when, for the first time, it was revealed that LIBOR manipulation was not restricted to co-workers at Defendant Banks, but

involved third-party dealers and brokers. This revelation occurred in connection with UBS's settlement agreement, wherein UBS agreed to pay fines three times that of Barclays for its role in manipulating the LIBOR rate.

77. UBS's settlement "exposed the systemic problems with the rate-setting process."²¹ According to Tracey McDermott, the enforcement director for the U.K. Financial Services Authority ("FSA"), UBS ignored "[t]he integrity of benchmarks [which] are of fundamental importance to . . . international financial markets." The UBS settlement exposed the illicit profit certain Defendants had gained, and prompted criminal investigations and arrests. Banks had previously expected to face fines, almost as a cost of doing business, but now the U.S. Department of Justice had extracted a guilty plea by UBS's Japanese subsidiary to wire fraud, and indicted some of the bank's senior traders.

78. Defendant ICAP was at the center of the LIBOR scandal, and paid \$87 million to settle U.S. investigations into its conduct. ICAP was found to have "knowingly disseminated false and misleading information concerning Yen borrowing rates to market participants in attempts to manipulate, at times successfully, the official fixing of the daily Yen LIBOR."²² ICAP and its clients, most noticeably UBS, worked together to hide their collusion from the rest of the market.

79. Following UBS's settlement, updates about the breadth of ongoing investigations continued throughout 2013. With each report, the scope of the benchmark-setting corruption investigations became broader. Having seen the banks' corruption of one key financial

²¹ Mark Scott and Ben Protess, *As Unit Pleads Guilty, UBS Pays \$1.5 Billion Over Rate Rigging*, New York Times (Dec. 19, 2012), http://dealbook.nytimes.com/2012/12/19/as-unit-pleads-guilty-ubs-pays-1-5-billion-in-fines-over-rate-rigging/?_php=true&_type=blogs&_r=0.

²² CFTC, *CFTC Charges ICAP Europe Limited, a Subsidiary of ICAP plc, with Manipulation and Attempted Manipulation of Yen Libor* (Sept. 25, 2013), <http://www.cftc.gov/PressRoom/PressReleases/pr6708-13>.

measurement, regulators were not content to presume they were trustworthy with respect to others. For instance, regulatory agencies have explicitly stated that their investigation into ICAP's wrongdoing is not limited to its manipulation of Yen LIBOR, with Mythili Raman, head of the Justice Department's criminal division, stating "We're not done."²³

80. By the time ICAP settled the investigation into its role in manipulating Yen LIBOR, the CFTC had already turned its attention to ISDAfix. The U.K. Financial Conduct Authority has given its ISDAfix investigation "formal status," signifying that it is conducting its own full investigation rather than merely assisting the CFTC. The investigation into ISDAfix is turning up the same sort of incriminating evidence as was uncovered in the context of LIBOR: emails, telephone records, and other evidence showing bank traders and brokers working together with the express goal of moving the ISDAfix rate in order to profit from their derivatives positions. Many of the Defendants that signed settlement agreements over their role in LIBOR are required to cooperate with the investigations into ISDAfix as part of that settlement, and face criminal prosecution should they withhold any evidence.

81. In April 2013, it came to light that the CFTC had issued its first round of ISDAfix-related subpoenas. The CFTC is said to be sifting through over one million emails and instant messages, as it simultaneously interviews current and former employees of banks, dealers, and ICAP as part of its ISDAfix investigation. In recent regulatory reports, ICAP confirmed that "the US CFTC has requested information in relation to [ICAP's] role in the

²³ David Enrich, Jean Eaglesham, and Devlin Barrett, *ICAP Is Fined \$87 Million in Libor Scandal*, Wall Street Journal (Sept. 25, 2013), <http://online.wsj.com/news/articles/SB10001424052702303342104579096942161083458>.

setting of the US dollar segment of a benchmark known as ISDAFIX which could also result in a formal investigation, claims or penalties as well as incurring further legal costs.”²⁴

82. UBS, RBS, Barclays, and Citibank have all similarly admitted in their recent regulatory filings to being subject to ISDAfix investigations, including having “ongoing obligations” to cooperate with such investigations. Indeed, it is now standard for instruments that use ISDAfix as a benchmark to include a warning notifying investors of the investigation into the ISDAfix manipulation.²⁵ And tellingly, commencing February 16, 2015, ISDAfix will no longer be set by a reference rate and submission process under the exclusive control of Defendants. Instead, in a move described as “an important step in ensuring market confidence in the integrity of the rate” by the ISDAfix administrator who replaced Defendant ICAP in 2014, the rate will be set by “tradable quotes provided by counterparties and order book data on regulated electronic trading venues.”²⁶

83. On September 9, 2014, Bloomberg reported that the CFTC had “told the U.S. Justice Department they’ve found evidence of criminal behavior following an investigation into

²⁴ ICAP Group Holdings plc, *Issue of EUR 350,000,000 3.125 per cent. Notes due March 2019 under the £1,000,000,000 Global Medium Term Note Programme* (Mar. 4, 2014), <http://www.icap.com/~media/Files/I/Icap-Corp/pdfs/002%20Final%20Terms.pdf>.

²⁵ For instance, one offering document discloses: “It has been reported that the U.K. Financial Conduct Authority and the U.S. Commodity Futures Trading Commission are working together to investigate potential manipulation of ISDAfix. If such manipulation occurred, it may have resulted in this rate or the quarterly difference in such rate being artificially lower (or higher) than it would otherwise have been. Any changes or reforms affecting the determination or supervision of ISDAfix in light of these investigations, may result in a sudden or prolonged increase or decrease in reported ISDAfix or the quarterly difference in ISDAfix, which could have an adverse impact on the trading market for ISDAfix-benchmarked securities such as your notes, the value of your notes and any payments on your notes.” Jan. 12, 2015 Goldman, Sachs & Co. Preliminary Prospectus Supplement (Registration Statement No. 333-198735) at S-6, <http://www.sec.gov/Archives/edgar/data/886982/000119312515008369/d850903d424b2.htm>.

²⁶ Financial Times, *ICE changes Isdafix interest rate swap basis* (Jan. 26, 2015), <http://www.ft.com/fastft/267592/ice-changes-isdafix-interest-rate-swap-benchmark>.

banks' alleged manipulation of ISDAfix[.]”²⁷ The article stated that the CFTC “which first sent subpoenas to the world’s largest banks in November 2012 to determine whether ISDAfix was rigged, has flagged its findings to prosecutors, according to a person familiar with the matter.”

84. All of this regulatory scrutiny over the ISDAfix rates caused ISDA to hire the consulting firm Oliver Wyman – the same firm retained by the British Bankers Association in connection with the LIBOR scandal – to make recommendations on how to modify the interest rate swap pricing process.

85. It was not until regulatory scrutiny increased in 2013 and 2014 that ISDA began the process of replacing ICAP in the setting of USD ISDAfix rates. ISDA spokesperson Steven Kennedy stated in January 2014 that ISDA removed ICAP from its role as collector of the USD ISDAfix rates and turned over the collection and calculation of those rates to Thomson Reuters.

86. In a press release, ISDA announced the implementation date for the “first stage in its two-phased process for moving to an automated, market-based ISDAFIX rate setting.”²⁸ The first phase includes a number of initiatives “to enhance the ISDAFIX polling process in response to the International Organization of Securities Commissions (IOSCO) Principles for Financial Benchmarks.” In addition to replacing ICAP with Thomson Reuters, ISDA announced the following initiatives in connection with its first phase:

- a) Clarifying the definition of ISDAfix to emphasize that contributing banks should use executable bid/offer rates. The definition includes a table referencing typical contract sizes for each market in order to provide a reference point for all banks and ensure consistency.

²⁷ Leising and Schoenberg, *supra* note 2.

²⁸ ISDA, Press Release, *ISDA Announces Key Steps in ISDAFIX Transition* (Jan. 27, 2014), <http://www2.isda.org/news/isda-announces-key-steps-in-isdafix-transition>.

- b) Establishing an ISDAfix Code of Conduct and an ISDA Oversight Committee to address internal governance, systems, and controls in order to maintain the highest standards for ISDAfix and the contributing banks, as well as ensuring compliance with the IOSCO Principles for Financial Benchmarks.
- c) Identifying, suspending, and/or discontinuing currencies and tenors of ISDAfix with insufficient liquidity in the underlying swap market. For example, ISDA suspended EUR LIBOR and JPY ISDAfix in January 2014.
- d) Implementing stronger ex-ante and ex-post checks and analysis of bank submissions by the calculation agent and by the contributing banks in order to validate individual submissions.

87. The second stage of ISDA's reforms "includes moving from the current bank submission-based method to an automated model that utilizes live prices from multilateral trading facilities (MTFs)." ISDA stated its intention to transition to an "MTF submission-based approach i[n] the second quarter of this year [2014] for euro swaps, with the US dollar and sterling swaps following later in 2014 or early 2015." Such an approach would lessen the possibility of contributor banks conspiring to manipulate ISDAfix rates.

88. In late February 2014, ISDA stated that it was soliciting offers from companies seeking to become the new benchmark administrator for ISDAfix. The winning bidder would be responsible for collecting the data, checking its integrity, and calculating the ISDAfix Rates.²⁹

89. In August 2014, ISDA officially announced ICE Benchmark Administration ("IBA") as the new ISDAfix administrator. In a press release, ISDA stated that the IBA formally

²⁹ Gavin Finch, *ISDA Puts Out to Tender Role of ISDAFIX Benchmark Administrator*, Bloomberg (Feb. 24, 2014), www.bloomberg.com/news/2014-02-24/isda-puts-out-to-tender-role-of-ISDAFIX-benchmark-administrator.html.

“took on its responsibilities as benchmark administrator and calculation agent for ISDAFIX in US dollar, euro, British pound and Swiss franc from August 1, 2014.”³⁰ Implicitly acknowledging the flaws in the former ISDAfix setting process, ISDA stated that “[a]s administrator, IBA will oversee a move from polled submissions model, where contributing banks submit price estimates, to a methodology based on actual transactions and/or executable quotes posted on regulated trading venues.” It was recently reported that starting in February 2015 the manner in which ISDAfix is calculated will change – shifting from submissions by a panel of banks to published rates based on tradeable quotes – in an effort “to bolster market confidence.”³¹

90. On February 4, 2015, it was reported that ICAP had been fined \$17 million by the European Commission’s competition authority for “breach[ing] antitrust laws by facilitating attempts by several banks to rig a benchmark interest rate.”³² The European Commission also accused ICAP “of disseminating misleading information to banks that weren’t part of a cartel of banks trying to influence the yen Libor, saying the information was veiled as ‘predictions’ or ‘expectations’ of where the rate would be set” and of “using its contacts at other banks in an attempt to influence their submissions and serving as a communications channel between traders at Citigroup and at R.B.S., assisting in their anticompetitive behavior.”³³ In other words, as alleged to have also have occurred here, ICAP was willingly and actively facilitating coordination among multiple benchmark-setting banks.

³⁰ ISDA, Press Release, IBA Assumes ISDAFIX Administrator Role (Aug. 4, 2014).

³¹ See Philip Stafford, *ICE to change Isdafix calculation*, Financial Times (Jan. 26, 2015), www.ft.com/intl/cms/s/0/e778d3d6-a56e-11e4-ad35-00144feab7de.html#axzz3QGnQh9M8.

³² See Chad Bray, *European Authorities Fine ICAP \$17 Million in Libor Investigation*, New York Times (Feb. 4, 2015), <http://dealbook.nytimes.com/2015/02/04/european-authorities-fine-icap-17-million-in-libor-investigation/>.

³³ *Id.*

D. Further Investigations Into Financial Benchmarks Confirm Defendants' Tools of the Trade

91. To manipulate the market for interest rate swaps around the start of the ISDAfix polling window so as to move the ISDAfix reference rate in their desired direction, Defendants employed the same unlawful means that have been exposed by investigations and multi-billion dollar settlements concerning other financial benchmarks.

92. For instance, the CFTC found that each of Defendants HSBC, Citibank, JPMorgan, Royal Bank of Scotland, and UBS actively colluded to manipulate the price of Forex benchmarks. This manipulation resulted in the CFTC's imposing fines in excess of \$1.4 billion dollars on the five banks. The U.K.'s Financial Conduct Authority imposed a further £1.1 billion in fines on the same five banks in respect of the same manipulation in the U.K.³⁴

93. *First*, Defendants used chat rooms, instant messages, phone calls, proprietary trading venues and platforms, and e-mails to coordinate among one another to ensure that attempts to move the market in one way or the other were not undone (unwittingly or otherwise) by the contrary efforts of other members or other large banks. In the context of currency manipulation, the CFTC found that Defendants HSBC, UBS, Citibank, JPMorgan, and Royal Bank of Scotland, "used private electronic chat rooms to communicate and plan their attempts to manipulate the Forex benchmark prices for certain currency pairs."³⁵

³⁴ Defendant Barclays is reported to have avoided similar disciplinary action and fines only because it opted out of settlement talks "at the last minute." See Margot Patrick and Max Colchester, *Barclays Pulls Out of Forex Settlement Amid New York Complications*, The Wall Street Journal (Nov. 12, 2014), <http://online.wsj.com/articles/barclays-pulls-out-of-forexsettlement-amid-new-york-complications-1415792606>.

³⁵ U.S. Commodity Futures Trading Commission, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of HSBC Bank plc* (Nov. 11, 2014), at 2, www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfhsbcborder111114.pdf. See also CFTC, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and*

94. *Second*, with information in hand and a decision made to move in a particular direction, the colluding banks would equip each other with the tools to do so. In the currency context, where one of the five above-mentioned banks had a contrary book of orders, those orders would be “netted off” with third parties in order to reduce the number of adverse orders that were to be processed during the pivotal polling window – a process referred to as “taking out the filth” or “clearing the decks.”³⁶

95. When the banks had orders going in the same direction, they would “build” the orders by transferring them between other conspirators – a process referred to as “giving you the ammo.” That way a subset of banks could more easily control the process of ensuring the trades had the maximum effect at just the right time. Again, the CFTC found that the aforementioned five banks –including Defendants here– repeatedly engaged in such behavior to manipulate Forex benchmarks, including that they “altered [their] trading positions to accommodate the interests of the collective group, and agreed on trading strategies as part of an effort by the group to attempt to manipulate [downward] certain FX benchmark rates.”³⁷

6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of UBS AG (Nov. 11, 2014), at 2; CFTC, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of Citibank, N.A.* (Nov. 11, 2014), at 2; CFTC, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of JPMorgan Chase Bank, N.A.* (Nov. 11, 2014), at 2; CFTC, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of The Royal Bank of Scotland, plc* (Nov. 11, 2014), at 2. The CFTC has also released multiple examples of trader misconduct in private chat rooms by which Forex-trading banks – including Defendant HSBC – were able to profit from manipulation of currency benchmarks. See CFTC, Examples of Misconduct in Private Chat Rooms, www.cftc.gov/ucm/groups/public/@newsroom/documents/file/hsbcmisconduct111114.pdf.

³⁶ See U.K. Financial Conduct Authority, *Final Notice to HSBC Bank plc* (Nov. 11, 2014), at 16.

³⁷ *Id.* at 17.

96. *Third*, even if Defendants did not have enough “ammo” to move the market, they would just invent some. This has been called “painting the screen” – placing orders to give the illusion of activity, with the intention they would be cancelled later after the pivotal measuring window was closed. The placing of these fake orders would move the market at a time and in a way that would drive the benchmark in the desired direction. Defendants could thus use fake trades – which gave rise to no actual liability on their parts – to move the reference rate. In the ISDAfix area, as discussed below, a similar practice of simply instructing ICAP to alter the reporting process of transactions was used – and, when the market moved but not all the way, ICAP could and would also step in by nonetheless setting the “reference rate” at the predetermined level.

II. DEFENDANTS CONSPIRED TO UNIFORMLY RUBBERSTAMP THE “REFERENCE RATE” THAT MEMBERS OF THE CONSPIRACY HAD DRIVEN

97. Though the process of setting ISDAfix started with the prices that were in the market for swaps at 11:00 a.m., by way of ICAP’s “reference rate,” the final ISDAfix rate was set based on the results of a “poll” of the Defendant Banks as to their own individual pricing practices that day. This should have dissuaded anyone from trying to manipulate the market for swaps, because any last-minute swings would be filtered out by the Defendant Banks’ honest submissions to ICAP. But rather than honestly and individually responding to ICAP’s poll, as discussed below, Defendant Banks conspired to consistently tell ICAP they all had *exactly the same* prices, *down to five decimal places*.

A. Defendants Repeatedly Claim – Impossibly – To Have Had Identical Rates

98. After ICAP had determined the “reference rate” for a given day, it would circulate that rate to the Defendant Banks. The Defendant Banks were permitted to consider the reference rate, but were required to submit a rate which was a mean of where that Defendant was in fact

offering and bidding swaps in the relevant currency and of the relevant maturity. Under the explicit terms of the ISDAfix rate-setting process, Defendants were thus *not* free to simply accept the reference rate unless the mean of their own offer/bid rates happened to be *exactly the same* as the reference rate.

99. In reality, however, the Defendant Banks rigged this process, in contravention of the relevant rules. Defendant Banks agreed not to submit the *real* rates upon which they would trade in the market, but instead to accept the ICAP reference rate *regardless* of whether it matched the mean of that Defendant Bank's bid/offer rates.

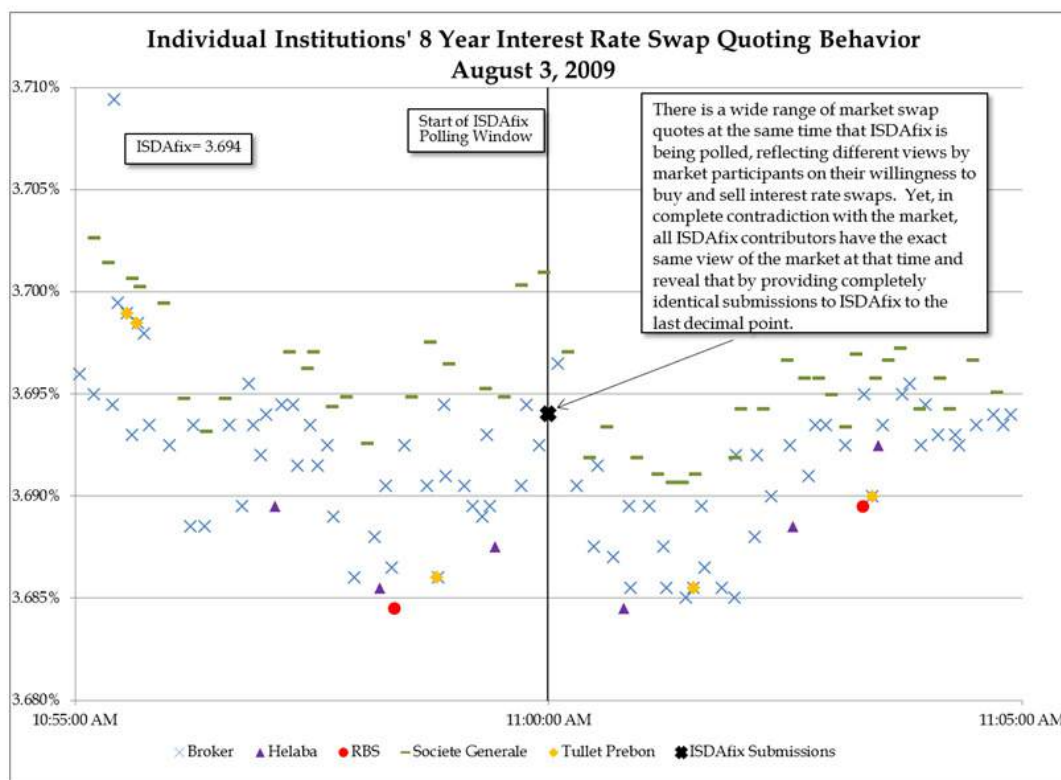
100. The Defendant Banks could and would communicate with each other via phone, email, and online chat rooms as to where to move ISDAfix. As illustrated by ICAP's recent fine for its involvement in similar benchmark setting misconduct, they could and would also coordinate their efforts by using ICAP as a go-between. Based on these communications, Defendant Banks coordinated their approach to ISDAfix, including strategies such as banging the close *and* falsifying submissions. Currently, the CFTC is reviewing phone recordings and over one million emails and instant messages linked to this conspiracy.

101. However, the reference rate process enabled the conspiracy to operate even without express, daily coordination. Every member of the conspiracy knew that its daily task was to rubberstamp the reference rate, no matter what – and that in return it could rely on others to do the same when it was advantageous for itself to take the lead in manipulating.

102. ISDAfix rate submissions go to five decimal points – to a thousandth of a basis point (*e.g.*, 3.20219%). Even if contributing banks always responded similarly to market conditions, the odds against contributors unilaterally submitting the exact same prices down to

the thousandth of a basis point are astronomical. Yet, this happened *almost every single day* between at least 2009 and December 2012 (the only years for which data is available).

103. To illustrate the improbability of so many banks taking the exact same view of the market, absent collusion, consider August 3, 2009. Quotes were scattered, as they naturally are, but the Banks' ISDAfix submissions for that day were remarkable – they all claimed to have the *exact same* view of the market.



104. "Dispersion" refers to the extent to which each ISDAfix submission varies from every other ISDAfix submission. Plaintiffs' experts compared the level of dispersion in ISDAfix submissions to the level of dispersion found in financial benchmarks that use similar submission systems. They computed the average difference between the highest and lowest rate submissions for a variety of such benchmarks.

105. The level of uniformity observed in ISDAfix was not present in the rate submissions for analogous benchmarks. The only exception was a period of approximately one year from August 2006 through August 2007 in which USD LIBOR quotes were completely equal to each other day in and day out for almost virtually all of the contributing banks. But of course, it is now known that LIBOR was being manipulated, so this parallel bolsters Plaintiffs' allegations.

106. Aside from LIBOR, the comparable benchmark with the least dispersion among its submissions – the ISDAfix rate in British pounds – showed six times more dispersion than the USD ISDAfix submissions. Benchmarks for government bonds showed between 23 and 37 times more dispersion than USD ISDAfix. These findings point powerfully to the conclusion that the USD ISDAfix panel banks were coordinating their ISDAfix submissions.

Instrument	Dispersion (basis points)	Ratio to USD ISDAfix
30-year USD ISDAfix submissions	0.12	N/A
30-year GBP ISDAfix submissions	0.7	6x
30-year EUR ISDAfix submissions	1.0	8x

107. The above chart demonstrates that the level of dispersion seen in GBP (British Pound) and EUR (Euro) ISDAfix submissions is respectively six and eight times higher than USD ISDAfix submissions of the same duration.³⁸ While, for the entirety of the Class Period, ICAP administered the USD ISDAfix rates, Reuters administered the ISDAfix rates for other

³⁸ The data within this table is based on ISDAfix submissions by dealer banks across a selected sample of days through mid-2013. In the case of USD submissions, the average result across the sample also corresponds to the average dispersion taken across all submissions from 2009 through mid-2013.

currencies. ICAP, unlike Reuters, functions as both the ISDAfix administrator and as an inter-dealer broker. Because of ICAP's commission structure, its brokers have a strong incentive to assist in manipulating ISDAfix rates. Where that incentive does not exist, substantially greater levels of dispersion are observed.

108. The results are even more dramatic when comparing USD ISDAfix to other, similar non-ISDAfix benchmarks, as seen below.³⁹

Instrument	Dispersion (basis points)	Ratio to USD ISDAfix
30-year USD ISDAfix submissions	0.12	N/A
USD interest rate swaps	0.7	6x
10-year German Bunds	1.4	12x
10-year US Treasury Bonds	2.7	23x
10-year Italian BTPs	4.4	37x

B. The Level of Uniformity Seen in Defendants' ISDAfix Submissions Was Undermined by Their Concurrent Market Rates

109. Prior to December 2012, the Defendant Banks made stunningly similar ISDAfix submissions. That those were not actually each bank's honest views of its own prices is not only confirmed by the sheer statistical unlikelihood of such perfect alignment, and by the comparative misalignment to other interest rates, but also by the fact that the banks in the real world were not so aligned at any other time of the day.

³⁹ The data within this table is based on end of day quotes from dealer banks from the end of 2010 until mid-2014 for USD interest rate swap quotes; from the beginning of 2014 until mid-2014 for US Treasury Bonds and German Bunds; and from mid-2013 until mid-2014 for Italian BTPs. All data is from Bloomberg sources.

110. The following table shows how Defendants RBS and JPMorgan (the only two Defendants with identifiable quotes available to Plaintiffs) *almost always* told ICAP that they had *identical* rates. Yet on those same exact days, RBS and JPMorgan were *only rarely* providing similar quotes to the actual market. The table below contains data measuring the percentage of instances where RBS and JPMorgan submitted matching interest rate swap quotes versus the percentage of instances where RBS and JPMorgan contributed matched ISDAfix submissions for the period January 1, 2009 – December 18, 2012. The swap quotes compared were submitted within two minutes of each other.

Comparison of Agreement: ISDAfix and Market Price (JPMorgan and RBS)

Maturity	Number of Instances Where RBS and JP Morgan Submit Interest Rate Market Prices Within 2 Minutes of Each Other	Percentage of Instances from Column [B] Where Market Prices Match	Percentage of Days that RBS and JP Morgan Contribute Matching ISDAfix Submissions and for Which They Also Submit Interest Rates Prices Within 2 Minutes of Each Other	Number of Days from January 2009 through December 18, 2012 Where Both RBS and JP Morgan Contribute ISDAfix Submissions	Percentage of Matching ISDAfix Submissions from Column [E]
[A]	[B]	[C]	[D]	[E]	[F]
1Y	n/a	n/a	n/a	163	93.9%
2Y	19	21.1%	100.0%	163	97.5%
3Y	24	0.0%	100.0%	163	95.1%
4Y	1	0.0%	100.0%	163	91.4%
5Y	18	0.0%	100.0%	163	93.9%
6Y	n/a	n/a	n/a	163	93.3%
7Y	12	25.0%	100.0%	163	90.2%
8Y	n/a	n/a	n/a	163	91.4%
9Y	n/a	n/a	n/a	163	92.6%
10Y	21	23.8%	100.0%	163	87.1%
15Y	n/a	n/a	n/a	163	91.4%
20Y	n/a	n/a	n/a	163	91.4%
30Y	n/a	n/a	n/a	163	93.9%

111. The only possible explanation for these results is simple: Defendants' ISDAfix submissions to ICAP were not – as they should have been – based on each Bank's unilateral and honest pricing decisions.

C. The Level of Uniformity Seen in Defendants' ISDAfix Submissions Abated Once Regulatory Scrutiny Increased

1. Defendant Banks' submissions begin to disperse in December 2012

112. If the mere provision of the reference rate validly explained the uniformity in bank submissions observed above, then one would have expected the Banks' bunching to continue in every year in which a reference rate was provided. To the contrary, the submission rates dispersed in late 2012 and into 2013, even though the reference rate process nominally remained the same.

113. In late 2012, with subpoenas being served on ISDAfix contributors and the announcement of the UBS LIBOR settlement and the subsequent announcements throughout 2013 of investigations into other benchmarks – such as the WM/Reuters foreign exchange fix, London gold fix, and even ISDAfix itself – Defendants' ISDAfix conspiracy began to unravel.

114. Throughout 2013, Defendant Banks' USD ISDAfix rate submissions became increasingly dispersed. For at least three years prior to December 2012, the Defendant Banks had submitted identical ISDAfix submissions virtually every day. By the end of 2013, however, less than half of the submissions submitted to ICAP were identical to the final ISDAfix rate for a given day. These changes in behavior of the ISDAfix panel banks are not explainable by any market events or market forces. They instead reflect steps by the Defendants to stop submitting identical rates in the hope of heading off further regulatory scrutiny of their conspiracy.

115. The chart below uses time periods corresponding to what can be understood as different "stages" ISDAfix manipulation: period one predates the first LIBOR manipulation settlement to reveal the involvement of dealer-brokers such as ICAP, period two ranges from this revelation regarding broker-dealer involvement until the first news of an investigation into ISDAfix, period three covers the period after news of the investigation has broken but prior to

any indication that illegal conduct has been found, and period four follows the announcement that regulatory investigations found what they regarded as evidence of criminal behavior.

Average Percentage of Daily Contributor Submissions That Are Identical to ISDAfix				
	Period 1	Period 2	Period 3	Period 4
Tenor	(1/2/2009 - 12/18/2012)	(12/19/2012 - 4/7/2013)	(4/8/2013 - 8/1/2013)	(8/2/2013 - 12/31/2013)
USD1Y	94.23%	67.72%	55.65%	43.00%
USD2Y	94.88%	61.99%	48.97%	38.68%
USD3Y	94.71%	58.41%	50.01%	39.06%
USD4Y	93.72%	58.14%	45.69%	34.77%
USD5Y	95.27%	81.88%	76.31%	56.76%
USD6Y	95.73%	54.80%	36.44%	29.02%
USD7Y	94.74%	56.55%	45.41%	32.87%
USD8Y	95.43%	43.75%	39.15%	31.23%
USD9Y	94.95%	48.13%	37.39%	32.22%
USD10Y	93.57%	78.66%	72.93%	50.01%
USD15Y	95.29%	50.22%	40.83%	32.03%
USD20Y	95.75%	50.41%	42.93%	26.91%
USD30Y	95.95%	85.04%	72.72%	59.46%
Source: Thomson Reuters, Bloomberg.				

116. The above chart shows the average percentage of USD ISDAfix submissions for various durations that were identical to the final ISDAfix rate for the day they were submitted. In Period 1 (from January 2, 2009 to December 18, 2012), about 95% of ISDAfix submissions were identical to the eventual, published ISDAfix rate for that day. In all subsequent periods, measuring the extent to which ISDAfix submissions matched the ISDAfix rate after December 19, 2012 (when the UBS LIBOR settlement became public), one sees a massive drop in the level of submissions identical to the ISDAfix rate. For example, in the USD6Y tenor, in Period 1, 95.73% of ISDAfix submissions were identical to the published ISDAfix rate. In the same tenor in Period 4, only 29.02% of submissions were identical to the ISDAfix rate.

117. Even where the submissions were not identical, they were still bunched together. The following table tracks the average difference between the highest and lowest ISDAfix rate submissions on each day for the same four time periods seen above. For each period, Plaintiffs' experts subtracted the lowest ISDAfix rate submission on each day from the highest submission

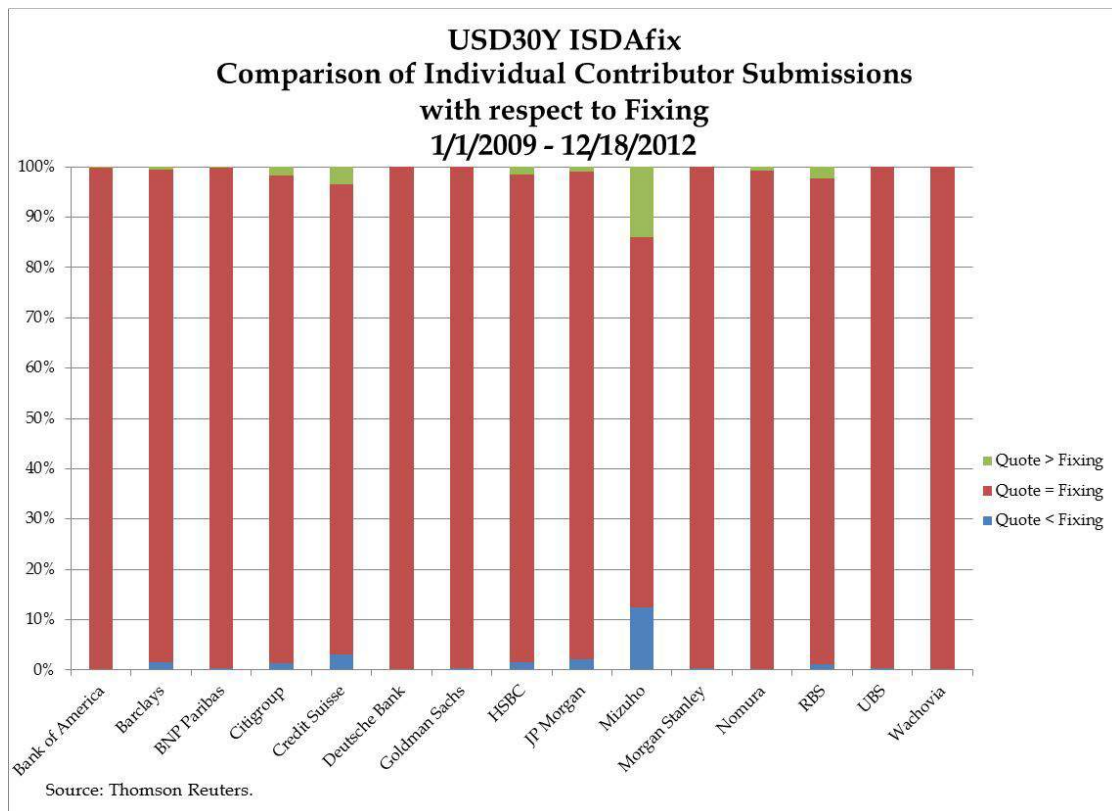
and then averaged the difference for the whole period. The numbers go steadily up after December 19, 2012, indicating that the differences among ISDAfix submissions substantially increased after disclosure of the involvement of banks and brokers in the LIBOR conspiracy and other benchmark scandals. This pattern continues over time, with the average difference between the highest and lowest ISDAfix submission steadily increasing as Defendant Banks came under fire from regulators. In fact, across many tenors, the average difference between minimum and maximum daily submissions more than quadrupled from Period 1 to Period 4.

Average Difference Between Minimum and Maximum Daily Contributor Submissions for ISDAfix				
Tenor	Period 1 (1/2/2009 - 12/18/2012)	Period 2 (12/19/2012 - 4/7/2013)	Period 3 (4/8/2013 - 8/1/2013)	Period 4 (8/2/2013 - 12/31/2013)
USD1Y	0.0013	0.0019	0.0029	0.0040
USD2Y	0.0018	0.0045	0.0026	0.0034
USD3Y	0.0020	0.0033	0.0035	0.0039
USD4Y	0.0026	0.0031	0.0037	0.0045
USD5Y	0.0016	0.0038	0.0028	0.0039
USD6Y	0.0014	0.0034	0.0043	0.0056
USD7Y	0.0018	0.0032	0.0038	0.0049
USD8Y	0.0013	0.0041	0.0048	0.0056
USD9Y	0.0013	0.0038	0.0046	0.0055
USD10Y	0.0021	0.0027	0.0032	0.0044
USD15Y	0.0016	0.0041	0.0049	0.0057
USD20Y	0.0012	0.0043	0.0050	0.0059
USD30Y	0.0010	0.0025	0.0033	0.0044
Source: Thomson Reuters, Bloomberg.				

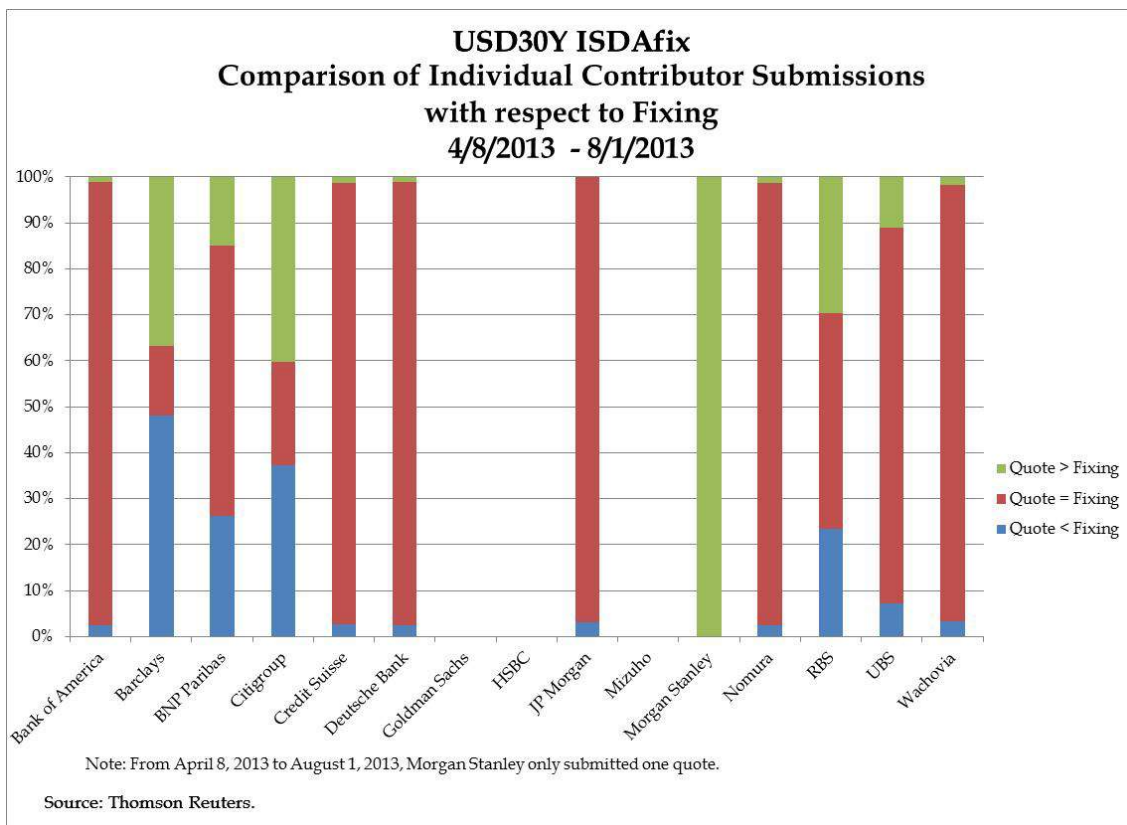
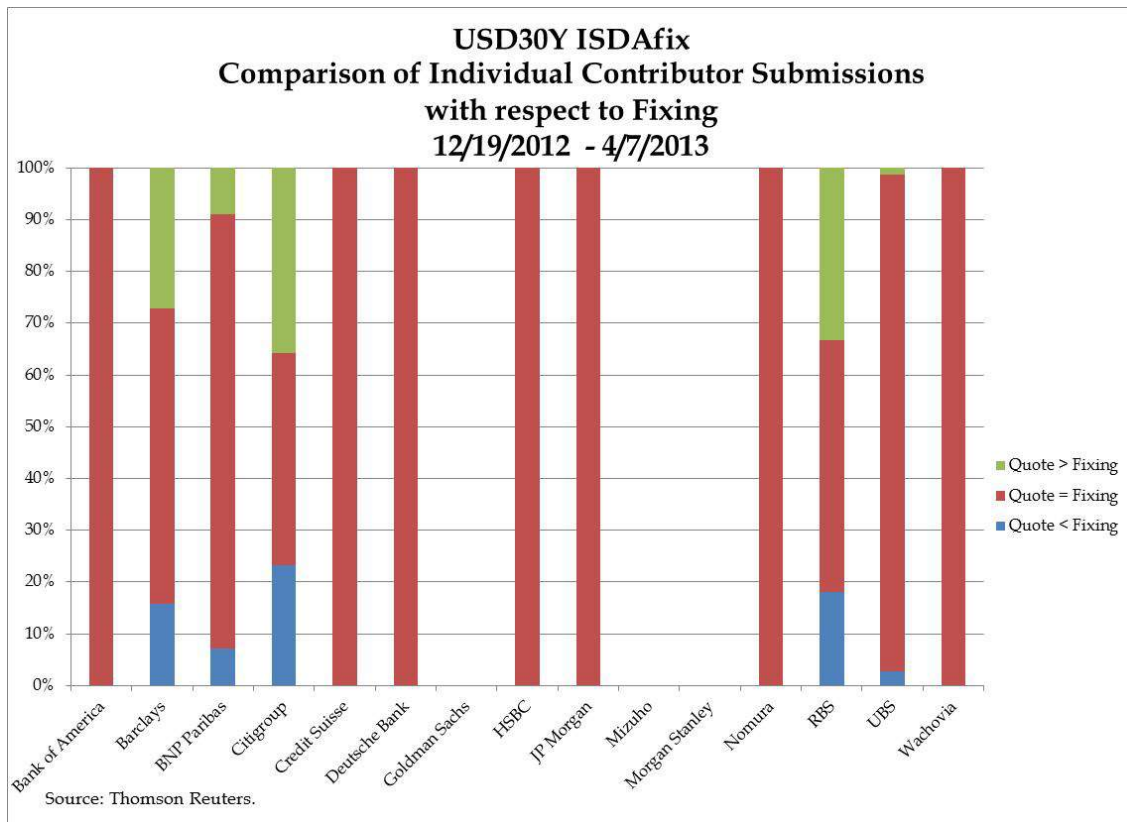
118. The practice of rubberstamping – or close to it – the reference rate ran across virtually every ISDAfix contributor. The following charts demonstrate the percentage of individual Defendant Banks' ISDAfix submissions that were *identical* to the ISDAfix rate for several different time periods. Red represents the percentage of the time a Defendant Bank's ISDAfix submission was identical to the ISDAfix rate. Blue reflects the percentage of the time

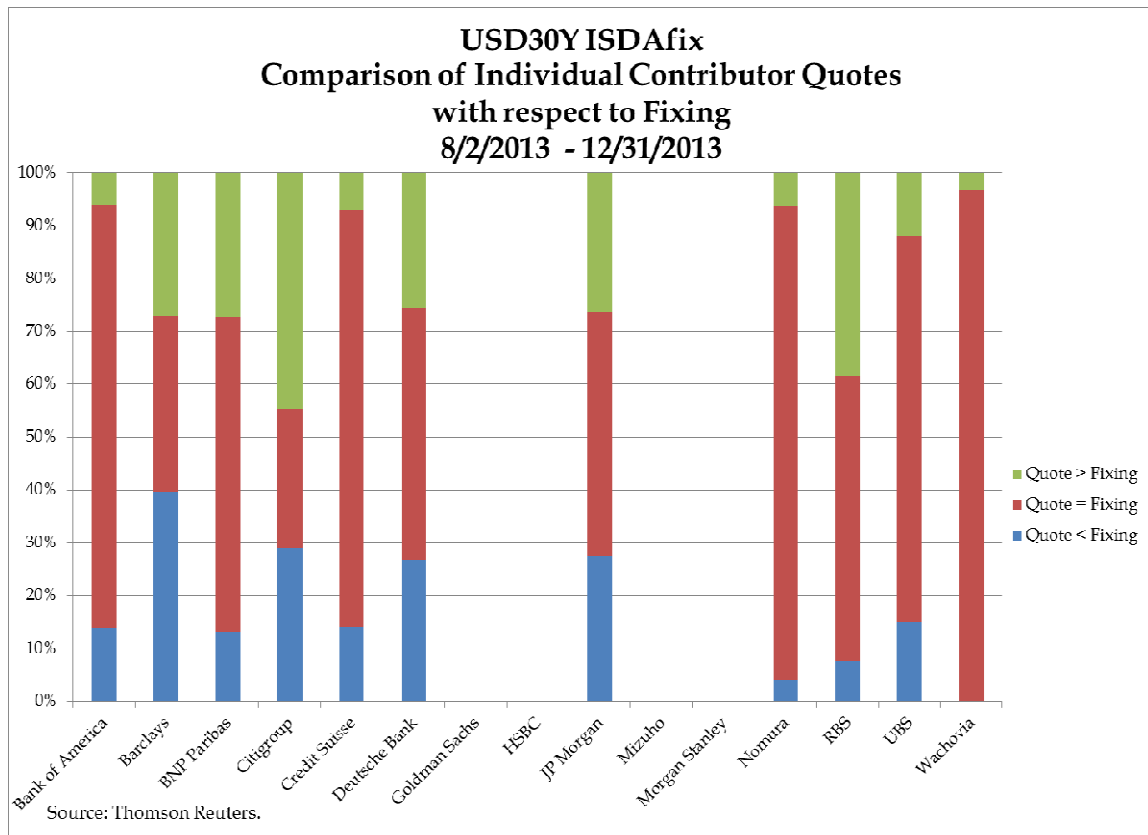
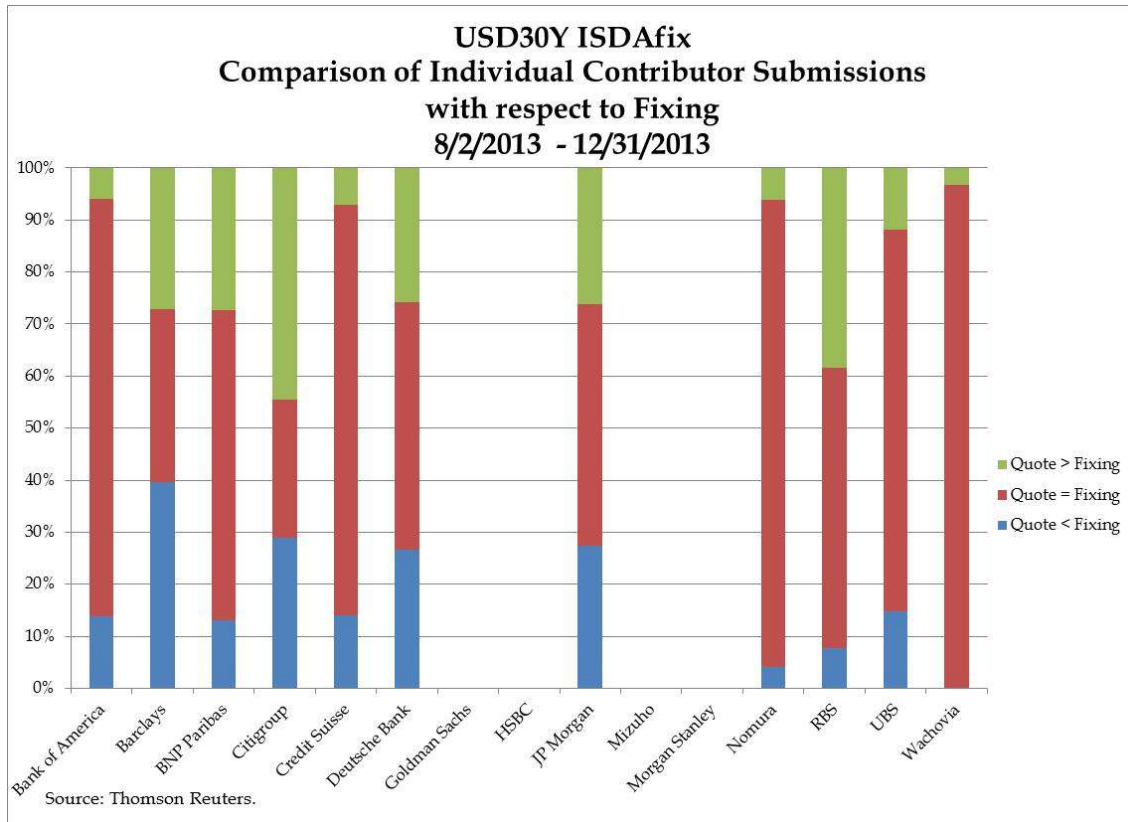
the ISDAfix rate was greater than the bank's submission, while green represents the percentage of the time that the ISDAfix rate was lower than the bank's submission.⁴⁰

119. As can be easily seen, the amount of red – *i.e.*, how often the Defendant Banks were each submitting the same exact rate – dissipates after December 2012.



⁴⁰ Charts for additional tenors (20Y, 15Y, 10Y, 9Y, 8Y, 7Y, 6Y, 5Y, 4Y, 3Y, 2Y, 1Y) are contained in Appendix B.



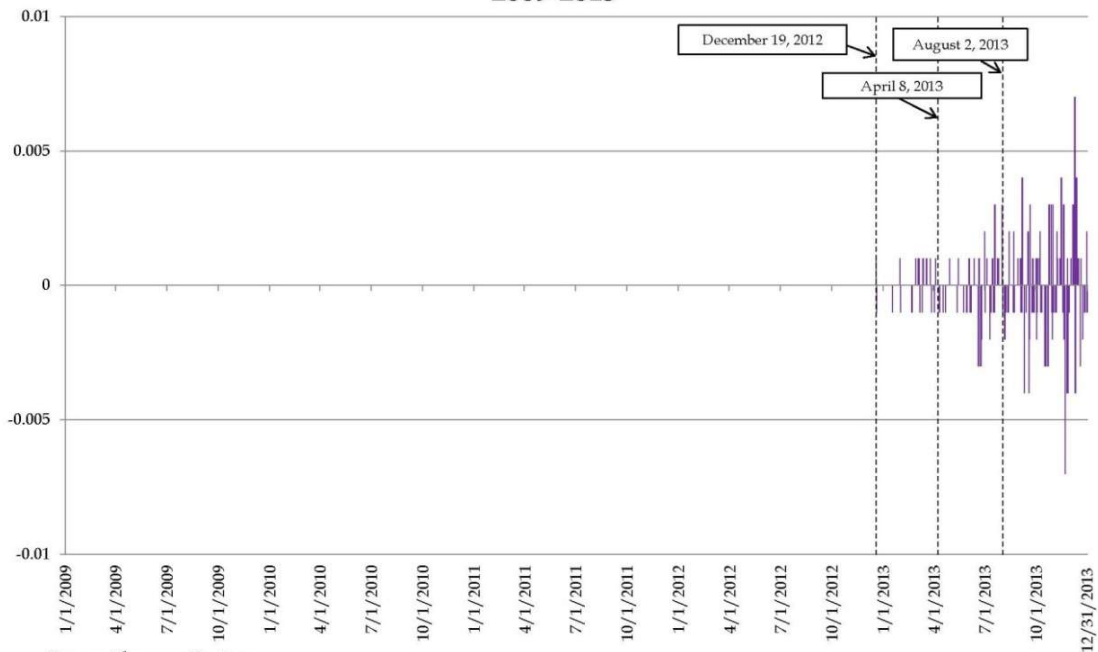


120. The first chart demonstrates that all Defendant Banks made identical submissions to ICAP well over 90% of the time prior to December 19, 2012. After December 19, 2012, amid news of the brokers' role in LIBOR and other benchmark scandals, Defendant Banks' submissions started to disperse. For several banks, the percentage of days on which their submissions are identical to the eventual ISDAfix rate goes from over 90% to under 50%. Virtually every bank shows a significant change in behavior. The picture that emerges from this study is the beginning of a structural break in the conspiracy where nearly every single ISDAfix contributor withdraws from the conspiracy and begins either to stop submitting altogether or to submit rates that truly reflect its actual swap rates in the marketplace.

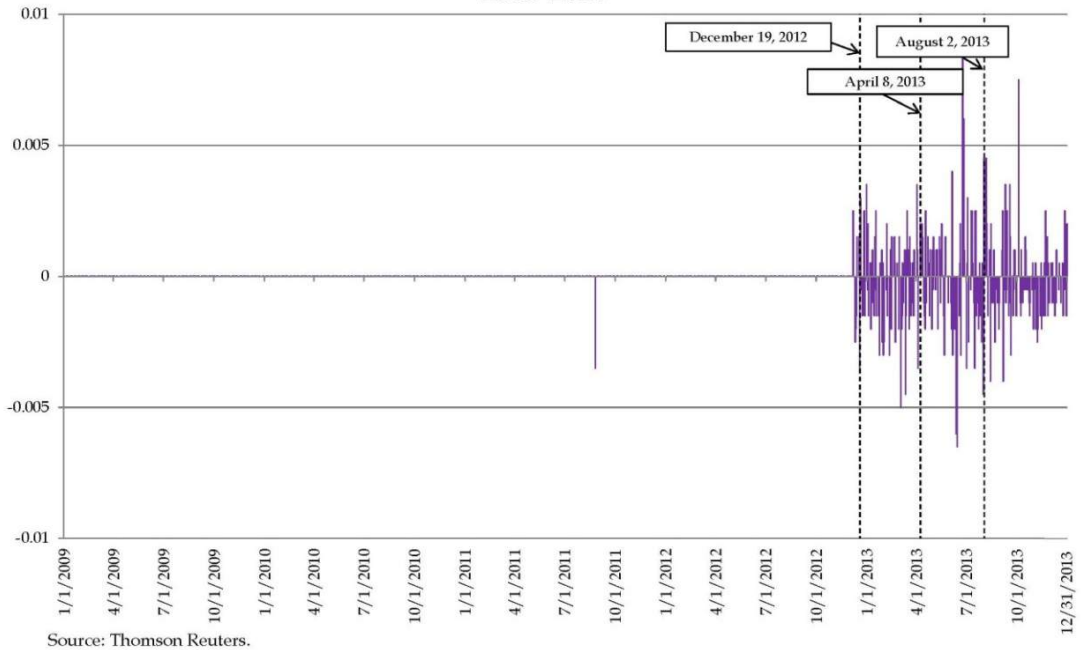
121. To see this remarkable uniformity of rates another way, Plaintiffs' experts charted over time the difference between a Defendant Bank's ISDAfix submission, and the final rate. The following charts represent Bank of America's and UBS's submission patterns over time in the USD 20Y tenor. The purple line represents the extent to which the individual banks' ISDAfix submissions deviated from the day's ISDAfix rate. In both charts, the purple line barely appears or does not appear at all until December 2012. Before December 2012, the banks' USD submissions always matched the ISDAfix rate. After December 19, 2012, the purple line begins to move upwards and downwards with increasing regularity – the banks' submissions frequently do not match the ISDAfix rate.⁴¹

⁴¹ Additional charts for all Defendant Banks for 30Y, 20Y, 15, 10Y, 9Y, 8Y, 7Y, 6Y, 5Y, 4Y, 3Y, 2Y, and 1Y maturities are contained in Appendices C – P.

Bank of America
USD20Y Daily Difference Between Bank Submission and ISDAfix
2009-2013



UBS
USD20Y Daily Difference Between Bank Submission and ISDAfix
2009-2013



122. Of the original 15 ISDAfix panel banks, only seven remain.⁴² As with the dispersions in rates submitted, these departures are directly linked to the ongoing investigations into rate-fixing of ISDAfix and other benchmarks. Increased regulatory scrutiny, as well as possible criminal penalties, have made participation in ISDAfix less profitable and, without the ability to manipulate the rates, Defendants “don’t see any upside.”⁴³ Indeed, “[f]irms are pulling out of rates such as . . . ISDAfix on growing concern that they may face lawsuits, fines and criminal penalties if found to have engaged in wrongdoing.”

2. The change in behavior cannot be explained by anything other than the breaking of the conspiracy

123. As discussed immediately above, the Defendant Banks’ submissions begin to disperse in December 2012, when the banks started to come under scrutiny. Plaintiffs’ experts performed tests to determine if this increase in dispersion could be explained by some phenomenon other than the breaking of a conspiracy.

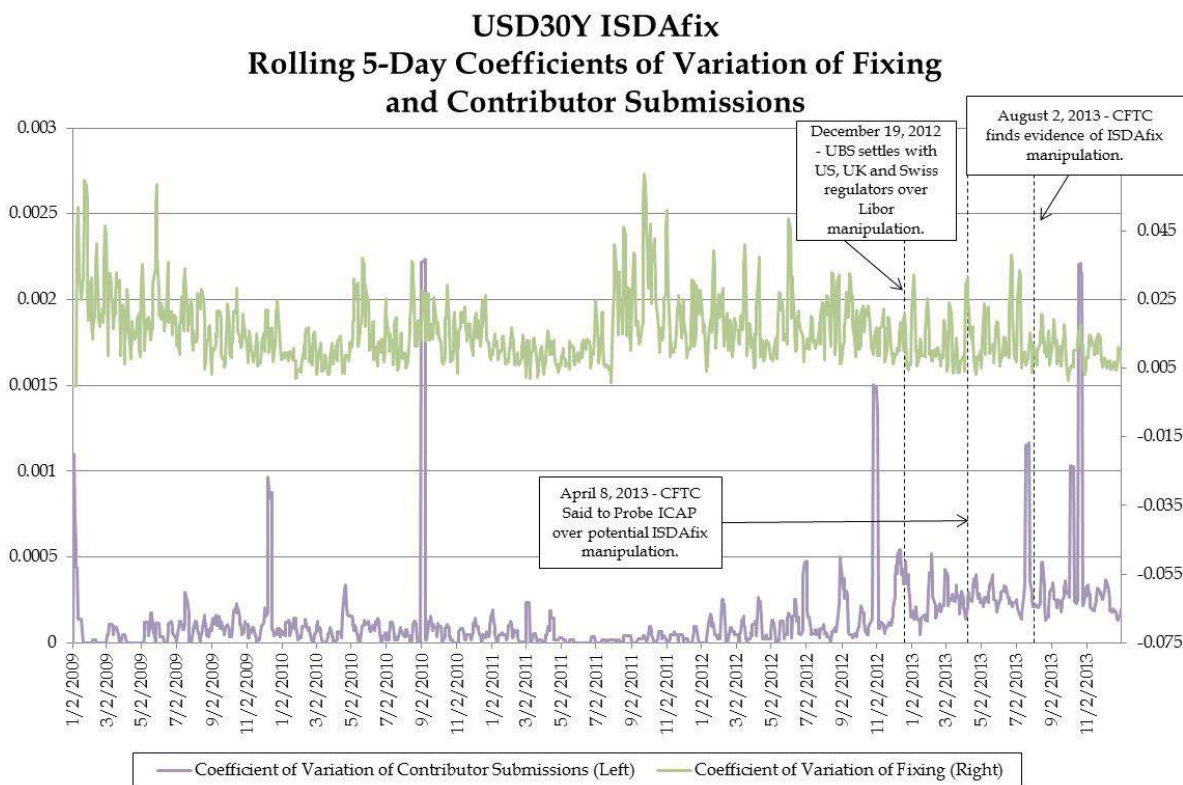
124. For instance, the experts sought to determine if the increase in dispersion could be explained by an increase in volatility in the market. To do this, Plaintiffs’ experts first charted both the variation in individual ISDAfix submissions for the USD 30-year swap rate and the variation of actual ISDAfix rates for that same USD swap rate, with both measures calculated over rolling five-day windows. In the chart below, the higher, green line represents the average level of variation in the final ISDAfix number,⁴⁴ i.e., it rises when the final ISDAfix rate changed

⁴² Intercontinental Exchange, *ISDAFIX Characteristics and Contributor Panels: US Dollar [USD] – Rates*, https://www.theice.com/publicdocs/services/ISDAFIX_USD_Rates.pdf.

⁴³ Liam Vaughan, *Banks Drop Off IsdaFix Panel Amid Rate-Rigging Probes*, Bloomberg (Apr. 15, 2013), <http://www.bloomberg.com/news/print/2013-04-14/banks-drop-off-isdafix-panel-amid-rate-rigging-probes.html>.

⁴⁴ Specifically, it charts the coefficient of variation, which is a normalized measurement of the level of dispersion, over a five-day rolling window. The data in this chart is solely from the Reuters actual/360 swap rate data.

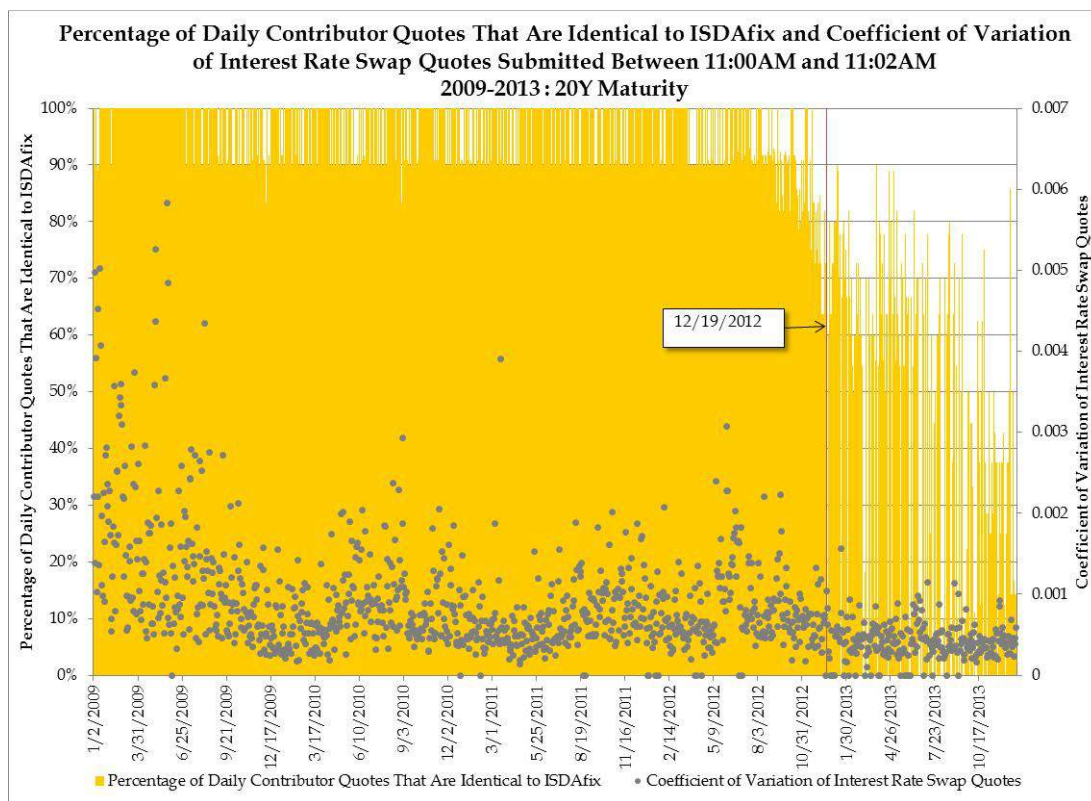
more from day to day to day. The lower, purple line represents the average level of variation in USD 30-year ISDAfix submissions. It rises when the Defendant Banks' daily ISDAfix submissions diverge. While the green line (ISDAfix) may spike or fall for any particular period, what is important is that the overall trend stays steady – which is to say, there is no obvious change in the volatility of the market that would explain the change in the behavior of Defendants' ISDAfix submissions.

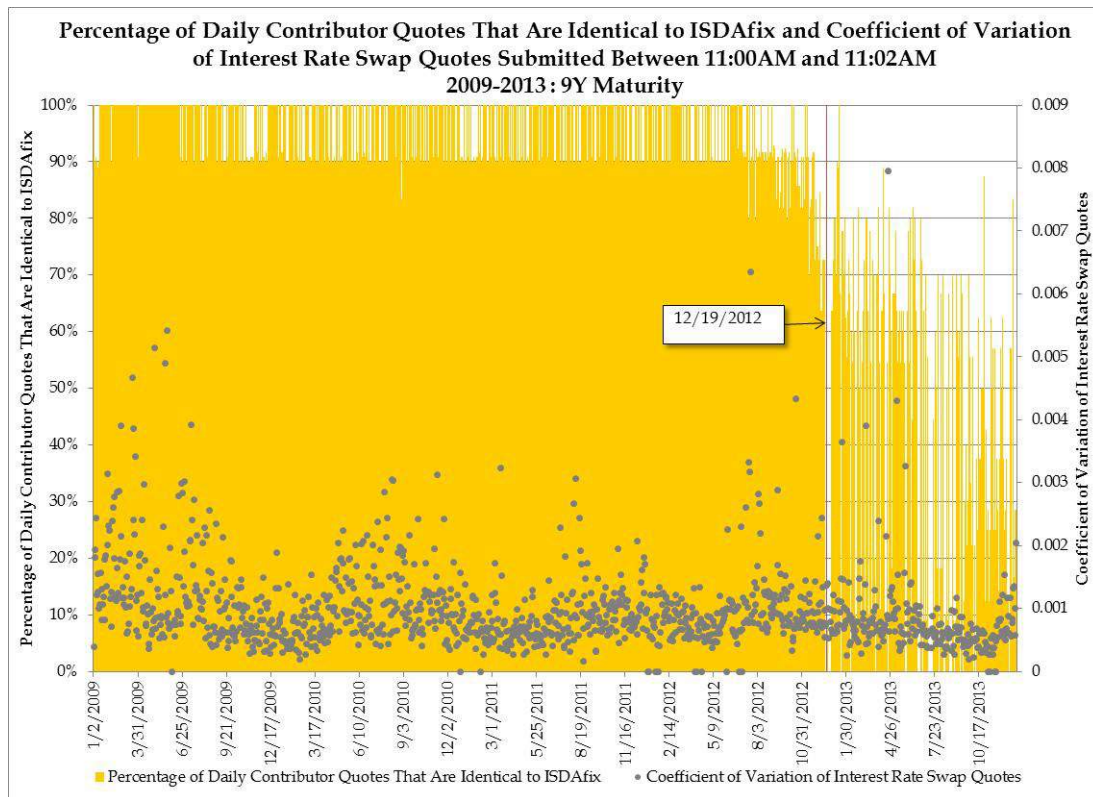


Sources: Thomson Reuters, Bloomberg.

125. The following charts similarly show that there was no increase in the volatility in the market that could explain why Defendants suddenly started telling ICAP they had different prices, when they had not before. Here, volatility is shown by the gray dots, one dot per day, for the dispersion in market quotes at the beginning of the polling window, *i.e.*, 11:00 to 11:02 a.m., at the same exact time banks were making their submissions to ISDAfix.

126. The higher along the Y-axis, the more variability in prices existed around the fixing window for each day. At the same time, the following charts include, with yellow lines, indications as to how often the banks' submissions matched ISDAfix. There is a stark difference in behavior in the yellow lines starting around the time the banks came under scrutiny (they become shorter and spread out, indicating the submissions matched far less often) even though there is no clear change in patterns in the grey dots (that is, there was *not* a sudden increase in volatility in 2013). Therefore, there were no changes in swaps market capable of explaining the drastic changes in ISDAfix submissions. Similar charts for additional tenors are contained in Appendix Q.





127. Market uncertainty thus cannot explain the drastic changes in ISDAfix submissions that coincided with the time period during which Defendant banks were coming under regulatory scrutiny. That the conspiracy began to break in December 2012 – *i.e.*, where the data shows the ISDAfix submissions began to act markedly differently – evidences consciousness of guilt on the part of Defendants. This is the only plausible explanation for the profoundly anomalous pattern of submissions, which started to dissipate when the banks came under scrutiny – despite no change either in the underlying ICAP reference-rate/polling process, or in the volatility of the underlying market.

III. DEFENDANTS AGREED NOT TO COMPETE IN THE SWAP MARKET TO DRIVE ICAP'S REFERENCE RATE TO THEIR PREFERRED LEVEL

128. As noted, the USD ISDAfix setting process starts with ICAP providing a “reference rate” to the Defendant Banks. The telltale signs of a conspiracy are found in the fact

that the Banks repeatedly rubberstamped that rate, in lockstep fashion, every day, for years. They then began to stop doing so as often when the regulatory heat was turned up.

129. But there would be no reason to rubberstamp the reference rate, if the reference rate was not set where the members of the conspiracy wanted it. The ISDAfix conspiracy thus also involved joint efforts to manipulate the reference rate.

130. The reference rate is drawn from, among other things, completed trades and executable bids observed in the market for swaps – a market in which Defendants were horizontal competitors. But competing fully on price in the market for swaps risked ISDAfix being set at an undesired level. Defendants’ conspiracy thus involved price-fixing in the market for swaps – the sharing of sensitive information among competitors, as to enable joint efforts to move the market in the desired direction just prior to 11:00 a.m.⁴⁵ This ensured that the rubberstamping would result in an ISDAfix rate that was favorable to Defendants, regardless of what an unmanipulated market for swaps would have looked like.

131. Even with just the limited information that is publically available, using the methodologies discussed below, Plaintiffs’ experts have been able to preliminarily identify and *thousands* of instances throughout the Class Period on which manipulative trading practices in the market for swaps occurred across multiple tenors around the fixing window. Because Defendants invariably accepted the reference rate and helped determine it by moving market rates ahead of the polling window, as described in more detail in Section II above, such practices not only meant that the market for swaps was distorted by Defendants’ pricing manipulations, but also that the final ISDAfix rate would be as well.

⁴⁵ As discussed further below, Defendants had to try to move the market, and thus the reference rate, among other reasons, so as to not make the conspiracy, and ISDAfix’s unreliability, too obvious. But when the market did not move far enough to hit the target rate exactly, ICAP could and would also simply set the reference rate at the predetermined level.

132. Plaintiffs' experts applied various screening methodologies to identify artificial days. "Screens" are statistical tools based on economic models that use available data such as prices, bids, quotes, spreads, market shares, and volumes to identify the existence, causes, duration, and scope of manipulation, collusion, or other illegal behavior, and who may have been involved.⁴⁶ The screens that Plaintiffs' experts used to analyze the intra-day USD swap rates for the period of January 2007 – December 2013 were as follows:

- a) Screen #1: Plaintiffs' experts tested the statistical significance of market moves in each analyzed ISDAfix tenor immediately before and after the fixing window. Plaintiffs' experts used Exponentially Weighted Moving Average estimator – a model that uses historical observations to capture the dynamic features of the volatility of the marketplace for any specific time or date – to predict the size of an expected market move. The model gives more weight to recent market observations than dated ones when estimating market volatility. Plaintiffs' experts compared the actual market moves immediately before and after the fixing window to the moves predicted by the Exponential Weighted Moving Average estimator, and identified as anomalous the moves whose size significantly exceeded the model's predictions.
- b) Screen #2: Plaintiffs' experts tested whether USD swap rates relevant to each of the analyzed tenors of ISDAfix rates immediately reversed direction following the ISDAfix windows. Specifically, Plaintiffs' experts examined whether at least half of the market movements leading up to the daily fixing were reversed within a time interval corresponding to the length of the fixing window (*i.e.*, before 11:30 a.m. following the 11:00 to 11:15 fixing window).
- c) Screen #3: Plaintiffs' experts identified days where ISDAfix was significantly different from the market rates quoted within the polling window. In particular, they flagged days for which ISDAfix was lower than the minimum

⁴⁶ See generally Testimony of Rosa M. Abrantes-Metz on behalf of the Office of Enforcement Staff, Federal Energy Regulatory Commission (Sept. 22, 2014), http://elibrary.ferc.gov/idmws/doc_info.asp?document_id=14274590. For instance, the use of screens was part of the initial analysis that eventually led to the discovery of the LIBOR rate-setting scandal that is still roiling the banking industry. Experts uncovered anomalous behavior in that interest-rate benchmark as compared to movements in other publically available data points (data points that were independent of the banks' purported individualized judgment). Screens also led to the initial detection, in the summer of 2013, of foreign exchange benchmark collusion and manipulation, which resulted in excess of \$3 billion in first round settlement payments by banks in the U.S., the U.K., and Switzerland in November 2014.

price taken from 11:00 to 11:15 a.m., or higher than the maximum price taken from 11:00 to 11:15 a.m.

- d) Screen #4: Plaintiffs' experts identified whether any potentially anomalous moves could be explained by overall market volatility. Plaintiffs' experts ranked the largest market moves for each day during the period of January 2007 – December 2013, and examined whether moves during or close to the ISDAfix polling window were ranked among the top market moves for that day.

A. Defendants “Banged the Close” to Manipulate the Reference Rate

133. Throughout the Class Period, Defendants conspired to push interest rate swaps to artificial levels through a manipulative trading strategy intended to move actual swap rates around the time ISDAfix was set.

134. To move market rates, Defendant Banks executed a series of rapid-fire trades and submitted executable bids and offers shortly before the reference rate was set. These trades and bids and offers were not reflective of the market, but were instead artificial and reflective of the Banks' desire to move ISDAfix rates to whatever level benefitted their trading books.⁴⁷

135. As seen in government findings in the Forex, LIBOR, and other scandals similar to this one, Defendants' traders used telephone calls, emails, and instant message or chat room conversations to coordinate their activities. And they also were able to coordinate through go-betweens, like ICAP here. This included, as summarized in Section I.D, sharing information about the banks' respective exposures and pricing goals; entry into inter-Defendant deals to prevent the banks from tripping over each other; and coordination as to the timing of transactions to ensure they would (if the transaction was in the “right” direction vis-à-vis the current market)

⁴⁷ Regardless of whether “banging the close” is or can be a proper trading strategy when conducted in isolation or pursuant to an arm's-length transaction, it is illegal when done pursuant to and in order to effectuate an antitrust conspiracy.

or would not (if it was in the “wrong” direction vis-à-vis the current market) impact the market just before the reference rate was set.⁴⁸

136. According to anonymous witnesses interviewed by Bloomberg, “swaption traders at banks worked with rate-swap traders at their own firms to manipulate ISDAfix.”⁴⁹ Pursuant to their agreements with traders at other Defendant Banks, these “swaption traders told their rate-swap colleagues the level at which they needed ISDAfix to be set that day in order to bolster the value of their derivatives positions before these were settled the next day.” Those “rate-swap trader[s] would then tell a broker at ICAP . . . to execute as many trades in interest-rate swaps as necessary to move ISDAfix to the desired level.” Correspondence produced by the Defendant Banks to the CFTC “show[s] that traders at Wall Street banks instructed ICAP plc brokers to buy or sell as many interest-rate swaps as necessary to move the benchmark . . .” According to a source interviewed by Bloomberg, the Defendant Banks “sought to change the value of the swaps because the ISDAfix rate sets” swaptions prices.

137. Pursuant to these agreements between the Defendant Banks’ rate-swap traders and ICAP, the Defendants would execute an inordinately high volume of transactions during or just before the first two minutes of the ICAP polling window. According to one witness interviewed by Bloomberg, “[t]his would be done just before 11 a.m. in New York.”⁵⁰ The ICAP brokers

⁴⁸ Notably, these communications would need not have included every Defendant Bank on every day. Each conspirator knew its daily role, at a minimum, was to rubberstamp the reference rate, as discussed in Section II above. Thus, only the subset of Defendant Banks that had a particular interest in moving the rate on a given day had to carry out the anomalous trading that day. But, by subsequently rubberstamping the resulting artificial reference rate, *all* Defendants participated in the conspiracy on a *daily* basis.

⁴⁹ Matthew Leising, *Swaps Probe Finds Banks Rigged Rate at Expense of Retirees* Bloomberg (Aug. 2, 2013), <http://www.bloomberg.com/news/2013-08-02/swaps-probe-finds-banks-manipulated-rate-at-expense-of-retirees.html>.

⁵⁰ *Id.*

had a strong incentive to participate in this conspiracy, as they would receive commissions on derivatives executed to move the ISDAfix rate and generate more overall transaction flow from the Defendant Banks. Consequently, ICAP brokers gladly assisted Defendant Banks in executing an exceedingly high volume of trades just before the reference rate was set.

138. ICAP brokers profited off each and every one of these trades; the higher the volume, the better. The approximately 20 interest rate swap brokers at ICAP would receive commissions based on every interest rate swap they facilitated. This group of brokers made \$100 million to \$120 million annually for ICAP in 2008 and 2009, according to individuals interviewed by Bloomberg. ICAP paid its brokers on average 61% of the revenue they generated in the six months ending in September 2012, according to an ICAP presentation dated November 14, 2012. ICAP paid brokers who used its electronic trading systems about 10-15% of revenue they generated.⁵¹ The top three to five brokers were each paid \$5 million to \$7 million annually. The amount of profit flowing through ICAP, in part because of the Defendant Banks' manipulative trading, earned ICAP's New Jersey office the name "Treasure Island."

139. Defendant Banks were willing to pay the large execution fees to ICAP because they stood to gain millions of dollars on interest rate derivatives by moving the USD ISDAfix rates. This is true even if the USD ISDAfix rates moved only as little as a basis point, because interest rate derivatives involve huge notional amounts. For example, for a \$100 million 10-year swap transaction, each change of one basis point amounts to a gain of about \$93,000.⁵² On

⁵¹ Matthew Leising, *ICAP Brokers on 'Treasure Island' Said to Reap ISDAfix Rewards* Bloomberg (Apr. 10, 2013), <http://www.bloomberg.com/news/articles/2013-04-10/icap-brokers-on-treasure-island-said-to-reap-isdafix-rewards>; *see also* ICAP, *Half Year Results Six months to 30 September 2012*, ICAP.com, 8 (Nov. 14, 2012), <http://www.icap.com/investor-relations/reports-and-presentations/~media/Files/I/ICap-Corp/reports-and-presentations/year-2012-13/hy-presentation-30-sept-2012.pdf>.

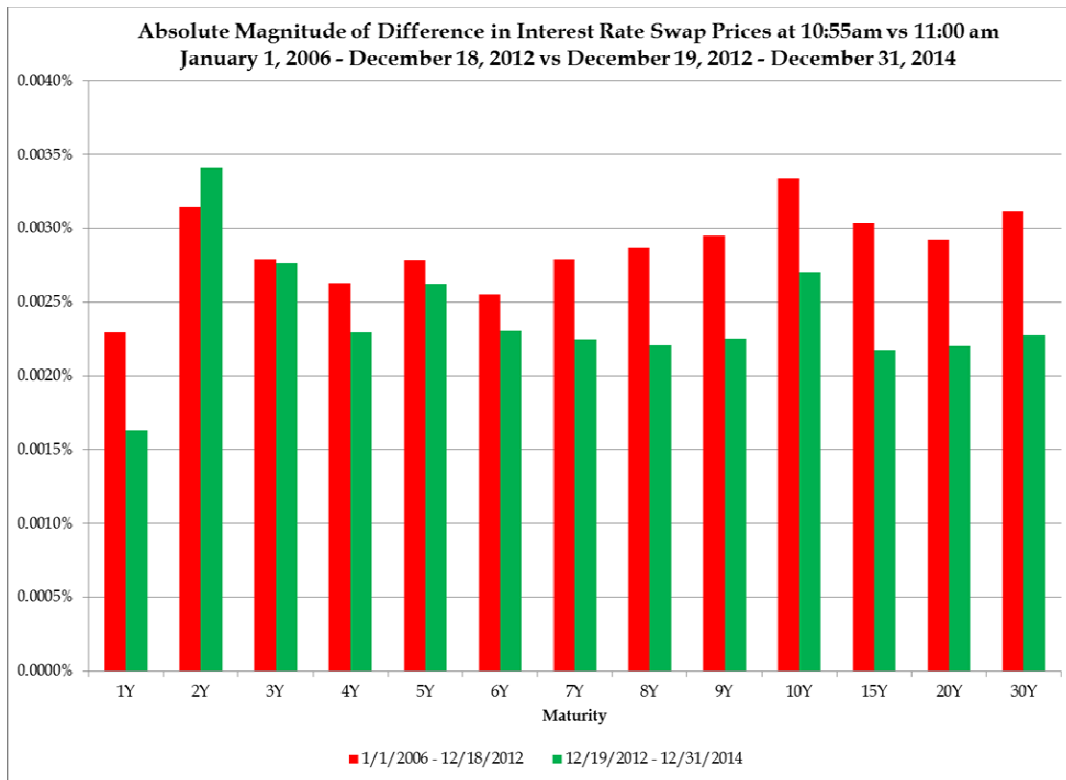
⁵² Mackenzie, *et al.*, *supra* note 7.

swaptions, Defendant Banks stood to gain even more because by “manipulating ISDAfix by as little as a quarter of a basis point, or 0.0025 percentage point,” they “stood to earn millions.”⁵³

140. Plaintiffs’ experts analyzed whether swap prices leading up to the polling window were being manipulated, in an effort to “bang the close” and affect market rates at 11:00 a.m. when ICAP puts forward the reference rate for ISDAfix. Specifically, they calculated the difference between the price at 10:55 a.m. and the price at 11:00 a.m., took the absolute value of this difference for each day, and then averaged these differences within two periods: from January 2006 through December 18, 2012, and from December 19, 2012 through December 2014. If up to December 18, 2012 prices were being manipulated either downwards or upwards in the last five minutes leading up to 11:00 a.m., but such manipulative conduct started to dissipate afterwards, then these absolute differences in prices at 10:55 a.m. versus 11:00 a.m. would have been larger up to December 18, 2012 than afterwards.

141. And this is in fact what the data shows. The figure below shows that for 12 out of the 13 maturities (the exception being 2Y), the differences between the 10:55 a.m. and the 11:00 a.m. prices are clearly reduced from before to after December 18, 2012 (*i.e.*, the red bars are taller than the green bars). This is consistent with a significant banging the close practice in either direction from 10:55 a.m. to 11:00 a.m. that was significantly reduced since December 19, 2012.

⁵³ Leising, *supra* note 49.



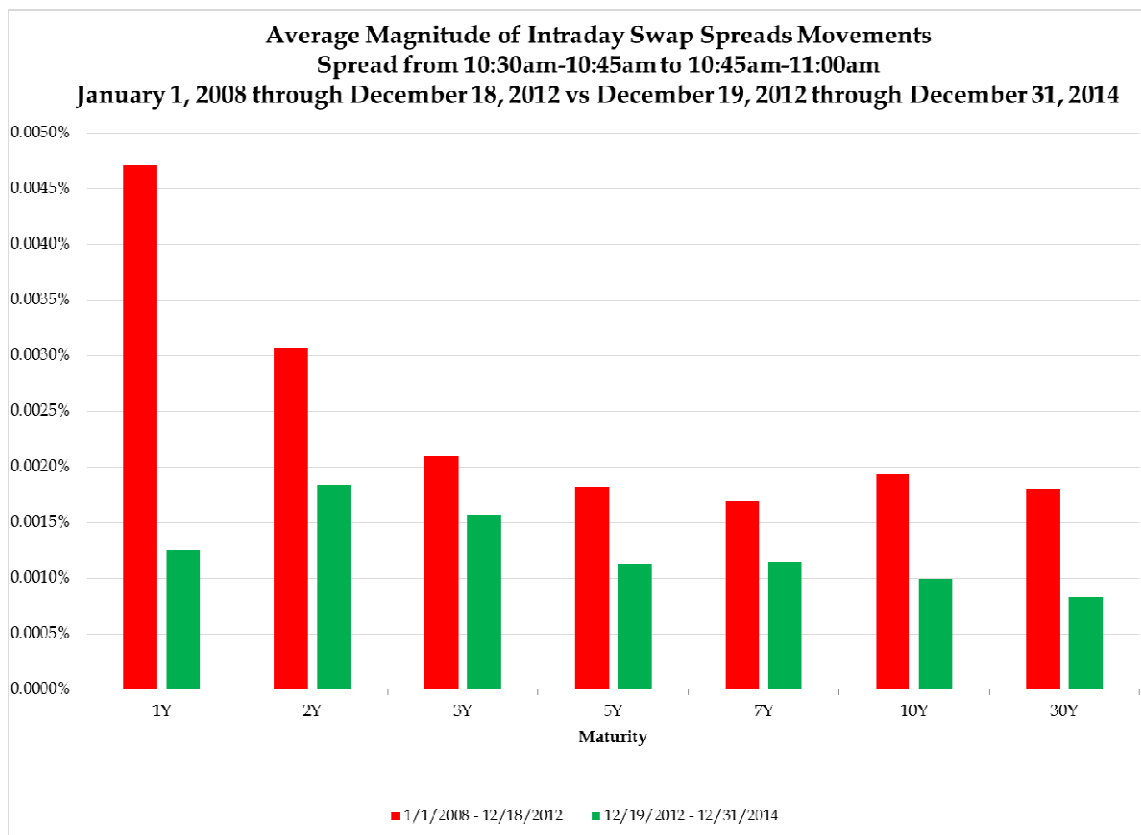
142. This practice of banging the close is further reinforced when comparing the difference between swaps rates and Treasury yields at the minute level. The difference between the ISDAfix for a given maturity and the treasury yield for the same maturity is known as the swap spread. Both represent fixed rate commitments, though reflecting differing credit and liquidity risks between the private and the public sectors. Despite some differences between the two rates, these are commonly close to each other and tend to track each other on an intraday basis, meaning, market quotes for swap rates tend to move along with market quotes for treasury yields. Therefore, comparing swap rates to treasuries is a reasonable method to control for key market factors that affect both rates, and in this way evaluate whether movements in swap rates are reflective of changes in market forces.

143. Plaintiffs' experts compared how the intraday swap spread (defined as the swap rate minus the treasury yield rate at the same moment in time), changed on average in terms of

magnitude from the fifteen-minute interval 10:30 a.m. – 10:45 a.m. to the immediately following fifteen-minute interval 10:45 a.m. – 11:00 a.m., before and after December 18, 2012.

144. Large movements in swap spreads from one block of time to another around the fixing period could be a signal of artificiality as swap rates move distinctly from treasuries, and that is what Plaintiffs' experts found.

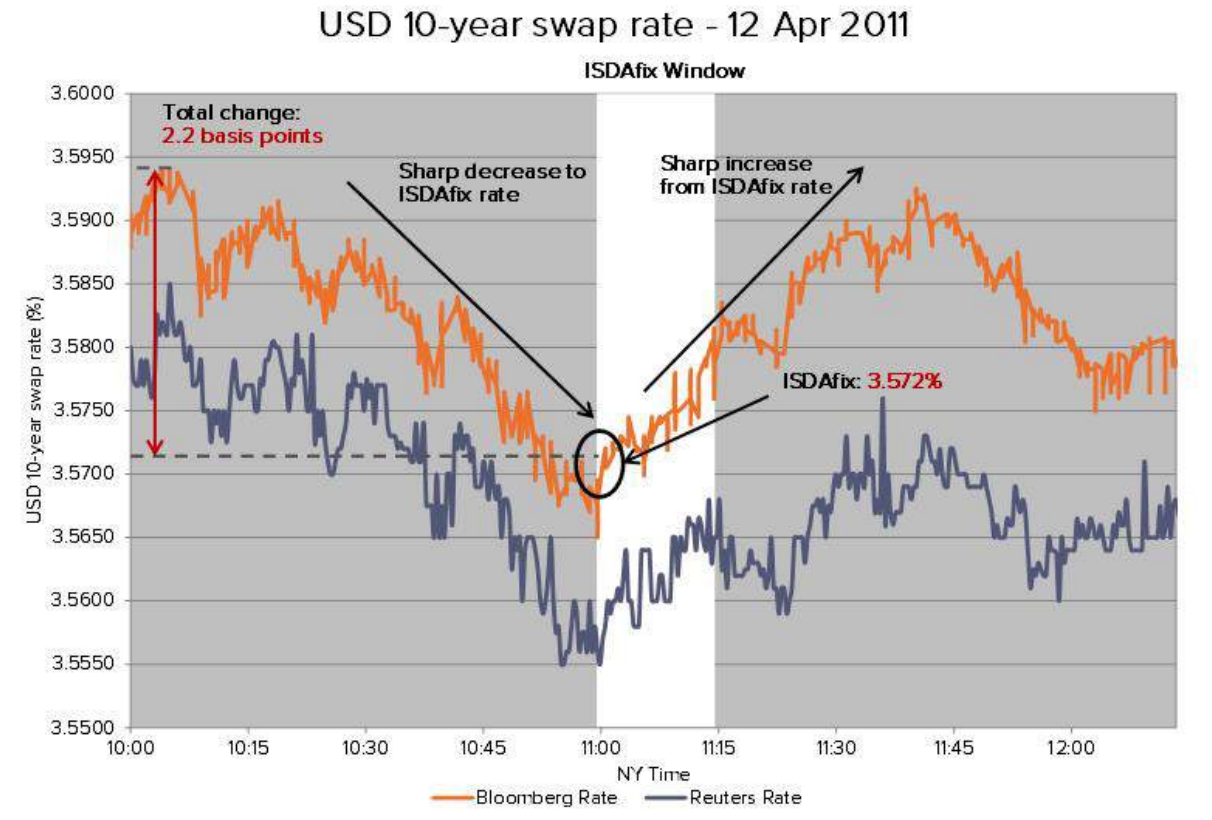
145. As shown in the graph below, the swap spread changed significantly prior to December 18, 2012 from the fifteen minutes covered by 10:30 a.m. – 10:45 a.m., to the fifteen minutes leading up to the polling window, *i.e.*, 10:45 a.m. – 11:00 a.m. (as illustrated by the red bars). But these changes in intraday swap spreads between these two sequential fifteen minute windows of time were very significantly reduced from the end of 2012 onwards (that is, the green bars are much lower than red). This is consistent with artificiality of intraday swap rates leading up to the polling window prior to December 2012 but not afterwards.



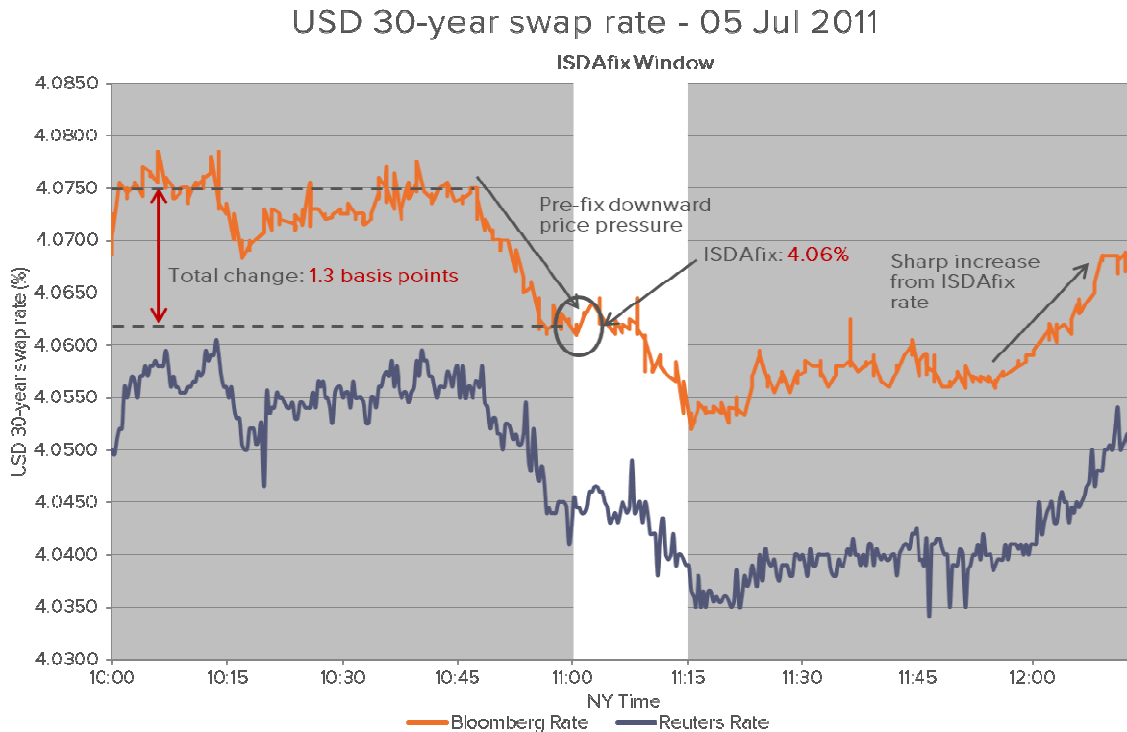
146. The analyses below illustrate some of these patterns for specific days.

147. The following chart, which tracks rates leading up to the polling window on April 12, 2011, illustrates Defendant Banks' banging the close strategy for a specific day. There is a sharp decrease in prices leading up to the 11:00 a.m. setting of the reference rate, after which the downward trend mysteriously ceases.⁵⁴ This is consistent with pushing through a large volume of transactions and executable bids and offers at artificially low fixed rates before the polling process started in an effort to drive the ISDAfix rate down.

⁵⁴ The two lines represent historical intra-day swap prices quoted using two different sets of conventions of quoting swap rates. The orange line represents a swap rate quoted on a "semi-annual, 30/360" basis and is available through Bloomberg. The blue line represents a swap rate quoted on an "annual, act/360" basis and is available through Reuters. ISDAfix is quoted on the same basis as the orange Bloomberg rate, and the ISDAfix reference point and contributor quotes are linked to that rate. The two rates are very similar, and their trends will track each other with only a small, consistent gap in basis points. Plaintiffs present data using both where available to demonstrate the similarity between the two, but there is a greater historical availability for the Reuters rate, and in some charts only the Reuters data is available. Plaintiffs will note when the data presented is solely based off the Reuters rate.

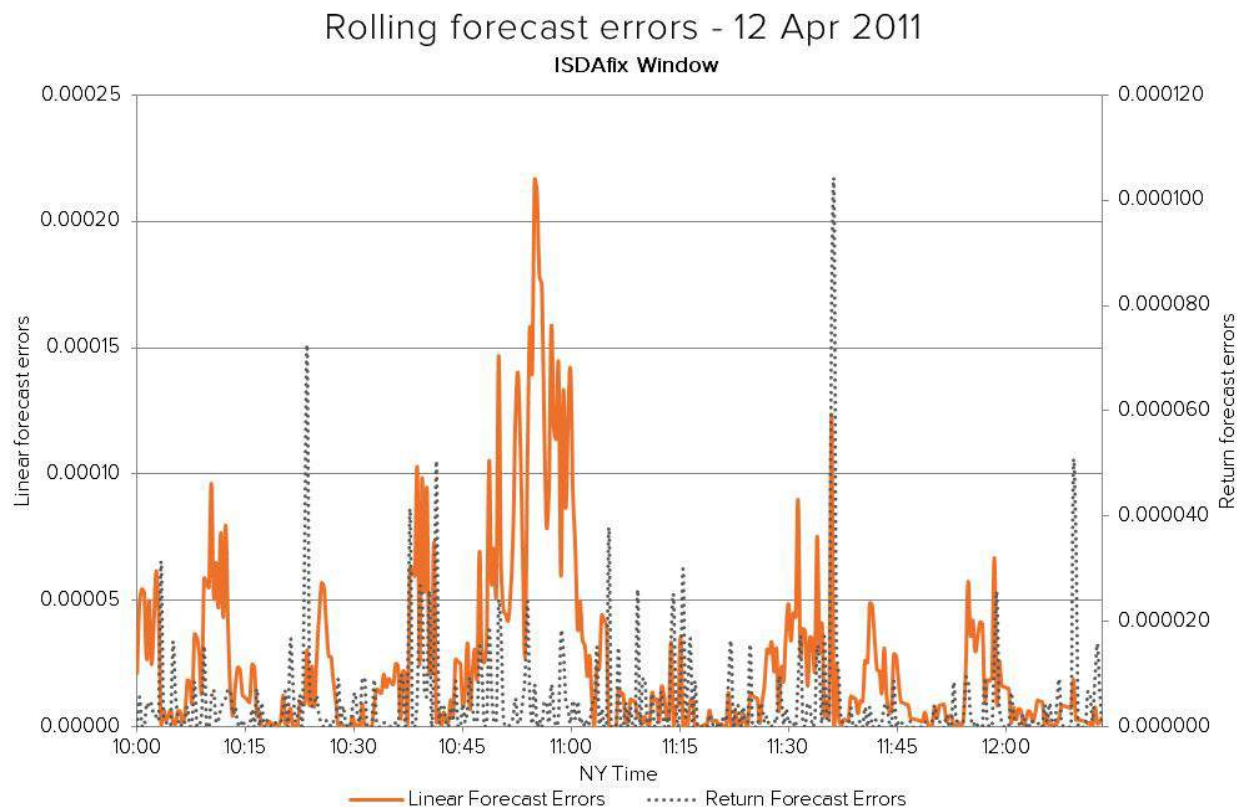


148. The following chart likewise shows a sharp drop in the 30-year swap rate just before the polling period. This is another example of Defendants' efforts to execute a high volume of low-rate transactions and submit low-rate executable bids and offers in the minutes leading up to the polling period.



149. To see “banging the close” from another angle, Plaintiffs’ experts calculated “rolling forecast errors” associated with anomalous moves in the swap rate. This consists of a “linear forecast error,” which is the squared difference between the current swap rate and the average swap rate in the previous 30 minutes, and a “return forecast error,” which is calculated the same way using returns, as opposed to swap rates themselves. A higher linear forecast error means that the ISDAfix rate is changing at a more rapid pace.

150. Economic analysis confirms that often swap rates surrounding the polling period varied substantially from swap rates in the surrounding 30 minutes. The following chart shows how quickly rates were changing on April 12, 2011, a representative day during the Class Period. The large spike indicates that the 10-year rate was changing twice as quickly during the period leading up to the 11:00 a.m. setting of the reference rate, than it was at any other time of the morning. This again strongly suggests a calculated shift in transactional behavior.



B. Defendants Conspired with ICAP to Delay the Publication of Transactional Information in Order to Manipulate the Reference Rate

151. Defendants Banks not only manipulated prices on the swap market in order to manipulate the ISDAfix reference rate (and thus, the ISDAfix rates derived there from); they also manipulated the ISDAfix reference rate by conspiring with ICAP to delay entry of certain swap transactions on Screen 19901 until the polling period was over. This was done to keep any undesirable transactions from being part of the data from which the reference rate would be calculated – *i.e.*, those which, when incorporated into the reference rate, would move that rate away from the level at which Defendants intended to set ISDAfix.

152. Before the recent changes to ISDAfix administration, banks often went through ICAP if they wished to engage in an interest rate swap with another dealer. ICAP brokers manually entered rates onto a screen and were in full control of when rates were published.

Typically, when ICAP brokered an interest rate swap, it reported the swap rate for that transaction on Screen 19901 on a real-time basis.

153. The Defendant Banks conspired with ICAP to delay the publication of rates during the Class Period for certain interest rate derivative transactions that would move the swap rate in the opposite direction of how they were planning to manipulate ISDAfix.

154. Specifically, when one or more of the Defendant Banks wished to push ISDAfix up or down, they would instruct ICAP brokers to delay publication of unfavorable transactions. By conspiring to delay publication until after 11:02 a.m., Defendants were able to ensure that unfavorable transactions did not impact the ISDAfix reference point. According to a former ICAP broker who witnessed the practice first hand, because “ICAP enters the prices manually onto the screen,” that “allow[ed] dealers to tell the brokers to delay putting trades into the system instead of in real time.”⁵⁵ The result was not only a distortion of the market for interest-rate swaps (as pricing information was being collusively withheld) but also, by way of the reference rate, manipulation of the ISDAfix rate.

155. Input of swap rates would not have been delayed unless ICAP decided to delay publication or ICAP was instructed to delay entry.

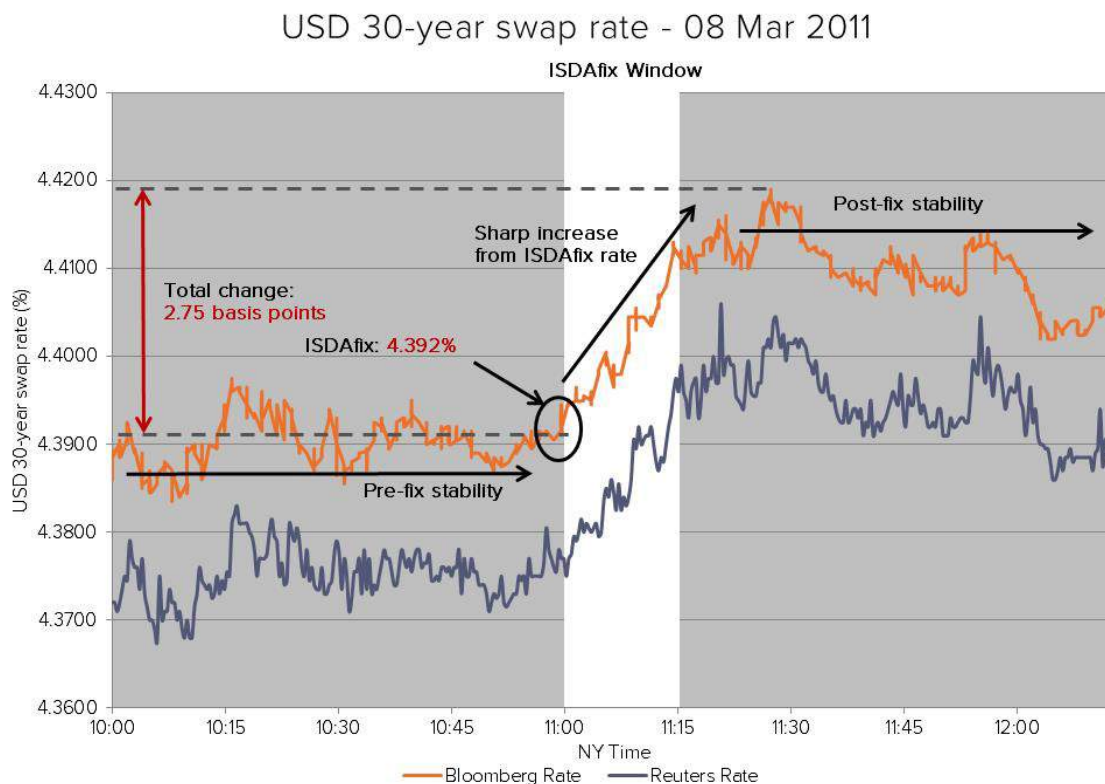
156. This practice was lucrative for Defendants because “[p]ublishing stale prices can potentially boost profits for banks in a market where trades are tied to tens of millions of dollars at a time.”⁵⁶ According to Bloomberg, “[i]f such a delay prevents the cost of the swap from

⁵⁵ Leising, *supra* note 49.

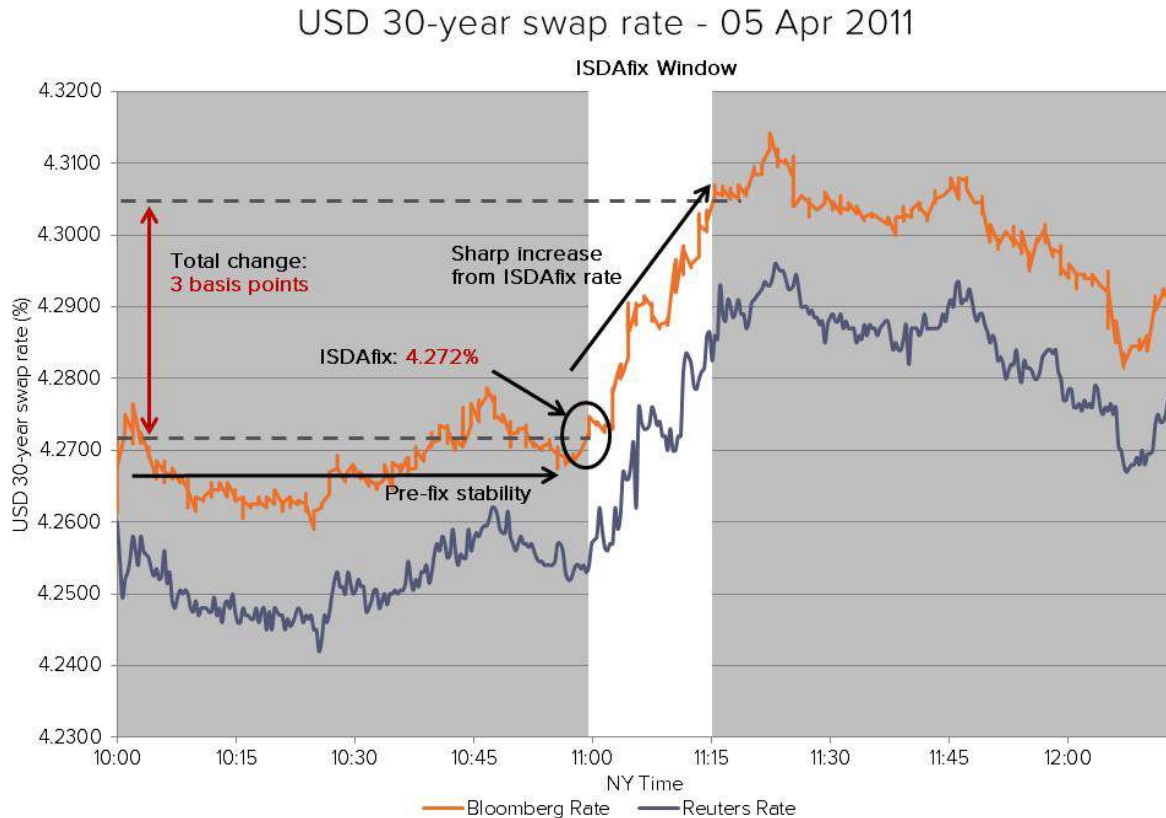
⁵⁶ Liam Vaughan, *Banks Drop Off IsdaFix Panel Amid Rate-Rigging Probes*, Bloomberg (Apr. 15, 2013), <http://www.bloomberg.com/news/2013-04-14/banks-drop-off-isdafix-panel-amid-rate-rigging-probes.html>.

moving one basis point, or 0.01 percentage point, that equals about \$1 million of profit for the dealer on a \$500 million swap that matures in 20 years.”⁵⁷

157. Transaction patterns strongly indicate that ICAP delayed the input of unfavorable transactions. On numerous days, the swap rate remained stable until just after 11:00 a.m. EST, after which it shot up or plunged. Just as with “banging the close,” the fact that the pivot point for these changes in behavior is at 11:00 a.m. is fully consistent with manipulating swap prices in order to manipulate ISDAfix. The following charts detailing swap rates on March 8, 2011 and April 5, 2011 demonstrate this phenomenon:



⁵⁷ Matthew Leising, *ISDAfix Probe Unveils Benchmark Affecting Bonds to Annuities* Bloomberg (Apr. 15, 2013), <http://www.bloomberg.com/news/2013-04-14/isdafx-probe-unveils-obscure-rate-affecting-bonds-to-annuities.html>.



158. In each of the above charts, the orange and blue lines represent the average swap rate at a given point in time as calculated by Bloomberg and Reuters, respectively. In both charts, the average swap rate remains relatively stable until just after 11:00 a.m., when ICAP releases the ISDAfix “reference point.” Immediately after the “reference point” is released (and thus there is little need to withhold reports of execution of transactions), the rate changes rapidly. This is precisely what one would expect to see if ICAP were manipulating the process by delaying input of certain data at the behest of the Defendant Banks. The net result is an artificially low rate for swaps and eventually an artificially low ISDAfix rate.

159. To again see this rapid change a different way, Plaintiffs’ experts performed an analysis of rolling forecast errors. Again, a high rolling forecast error means that there are substantial shifts in the swap rates at a given point in time. Plaintiffs’ experts calculated and